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COTTAGERS' SELF HELP PROGRAM

ENRICHMENT STATUS OF LAKES IN THE SOUTHEASTERN REGION OF ONTARIO 1983



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COTTAGERS' SELF HELP PROGRAM
ENRICHMENT STATUS OF LAKES
IN THE
SOUTHEASTERN REGION OF ONTARIO
1983

WATER RESOURCES ASSESSMENT UNIT
TECHNICAL SUPPORT SECTION
SOUTHEASTERN REGION
MINISTRY OF THE ENVIRONMENT

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The Ministry of the Environment (MOE) expresses its appreciation to all the samplers who volunteered their time to collect water samples and make water clarity measurements for the 1983 Self Help Program. Their continuous efforts represent a valuable contribution to the understanding of water quality conditions in the recreational lakes of this province.

Abstract

During 1971 the Ministry of the Environment (MOE) initiated a Self Help Program to enlist the assistance of cottagers in monitoring lake water quality conditions. From a modest beginning, the program in Southeastern Ontario has expanded to include 114 volunteers gathering data for 94 lakes during 1983. Of these, 52 lakes have now been sampled for six or more years. This trend-through-time data are making an extremely valuable contribution towards the understanding of natural seasonal and yearly fluctuations in lake water quality conditions. This in turn will assist with the detection of any trends in water quality resulting from man's activities.

This report presents the data for the 94 lakes sampled in Southeastern Ontario during 1983. The data are discussed in terms of within season and between year variabilities in algal productivity as reflected by chlorophyll concentrations.

In general, most of the lakes included in the 1983 program had excellent water quality conditions for recreational use although there were some exceptions in which an abundance of algae would have restricted recreational activities on the lake.

Of particular interest, the 1983 chlorophyll data provided evidence of the best lake water quality conditions since the Self Help Program commenced. In general, chlorophyll levels were dramatically lower than in previous years. Of the 52 lakes which have been sampled for six or more years, 32 had their lowest yearly chlorophyll levels occur during 1983. It is probable that climatic conditions during the 1983 recreational season accounted for the low level of algal productivity which occurred.

The rapidly expanding data base is now allowing the opportunity for a more thorough understanding of the water quality conditions of our lakes and the factors which influence these conditions. Continued participation in the Self Help Program is encouraged by the Ministry.

Abstract

Le ministère de l'Environnement de l'Ontario a lancé, en 1971, le programme Entraide pour inciter des propriétaires de chalets à surveiller la qualité de l'eau dans les lacs. Le programme, qui a débuté de façon modeste, comptait, en 1983 dans le Sud-Est de l'Ontario, sur la participation de 114 bénévoles qui ont recueilli des données de 94 lacs. Cinquante-deux de ces lacs font l'objet d'échantillonnages depuis au moins six ans. Ces données étalées dans le temps nous aident énormément à comprendre les fluctuations annuelles et saisonnières naturelles de la qualité de l'eau des lacs. Ceci nous aidera à déceler toute tendance dans la qualité de l'eau en raison des activités humaines.

Le présent rapport présente les données de 94 lacs qui ont fait l'objet d'échantillonnages dans le Sud-Est de l'Ontario en 1983. Les données sont analysées sous l'angle des variations saisonnières et annuelles dans la formation d'algues, exprimée en concentration de chlorophylle.

La qualité de l'eau de la plupart des lacs étudiés dans le cadre du programme en 1983 était généralement excellente pour l'utilisation à des fins récréatives; dans certains lacs, toutefois, l'abondance d'algues était telle que les activités récréatives y auraient été limitées.

Il convient de mentionner que les données de 1983 pour ce qui est de la chlorophylle révèlent que la qualité de l'eau des lacs a été meilleure cette année-là que pendant toute autre année depuis le début du programme Entraide. En général, les concentrations en chlorophylle étaient considérablement inférieures à celles des années précédentes. Sur les 52 lacs qui ont fait l'objet d'échantillonnages pendant six ans ou plus, 32 présentaient, en 1983, leurs plus faibles concentrations annuelles en chlorophylle. Il est probable que les conditions climatiques survenues pendant la saison des loisirs de 1983 aient été à l'origine du faible degré de formation d'algues enregistré cette année-là.

Le développement rapide de la base des données nous permet désormais de mieux comprendre les fluctuations de la qualité de l'eau des lacs et les facteurs qui influent sur cette qualité. Le ministère encourage la participation au programme Entraide.

1.0 INTRODUCTION

Ontario has some 250,000 inland lakes and borders four of the five Great Lakes. Increasing amounts of leisure time, growing affluence, and the easy accessibility of lakes to urban centers of population have resulted in the extensive development of lakes with summer cottages and waterfront resorts and campgrounds.

Increased development and activity within the watershed of a lake can result in changes to the lake itself. The most common of these changes is an increase in the rate of supply of nutrients, specifically phosphorus and nitrogen, to the lake. The result of an increase in the nutrient supply may be an increase in the growth and abundance of aquatic plants and algae in the lake. Algae are microscopic green plants which along with other aquatic plants convert the radiant energy of sunlight to the chemical energy of plant tissue. This phenomenon is termed primary production. Increased primary productivity gives rise to increased numbers of organisms at all levels of the food chain up to and including fish. The overall increase in the biological productivity of a lake by the nutrient enrichment of its water is scientifically referred to as eutrophication.

A certain amount of nutrient enrichment is beneficial. Aquatic plants and algae provide food and shelter for fish. The fertilization of lakes and ponds to increase productivity is in fact a management technique employed in some countries to enhance fish production. In these countries, the production of fish as a food supply may be the most important use of water bodies. Although total fish production is increased with artificial fertilization, serious eutrophication in natural waters may produce a shift in fish species from more desirable sport fish such as lake trout, to less desirable coarse fish. Most North Americans tend to look upon lakes as a recreational resource and an object of aesthetic beauty rather than a source of food and often regard the symptoms of advancing eutrophication as undesirable.

Increased amounts of algae cause water to become progressively more turbid with a corresponding reduction in water clarity. Weed beds interfere with nearshore aquatic activities such as swimming and boating. Increased amounts of algae may also increase water treatment costs where such lakes are used as a source of domestic supply.

In 1970, in response to a concern by cottagers and other citizens that too much shoreline development was causing water quality deterioration of our lakes, the MOE initiated a recreational lake survey program. The program is an inventory of the water quality of our recreational lakes involving physical, chemical and biological evaluations with emphasis on their trophic status definition.

Follow-up monitoring is required to determine if any changes in the water quality of our lakes may be occurring over time. Detailed surveys on a large number of lakes are beyond the capabilities of our staff, and are not necessary to monitor the enrichment status of recreational waters.

In 1971 the MOE introduced the Cottagers Self Help Program to enlist the assistance of cottagers, cottage associations, and others to make regular water clarity readings at their lakes, and to collect and submit samples of water to the Ministry for analysis of their algal content. The program commenced with sampling on 12 lakes across the province and has grown to include 114 volunteers on 94 lakes in the Southeast Region alone in 1983 (Table 1-0).

The Southeastern Region includes Hastings, Prince Edward, and Renfrew Counties and extends eastward to the Ontario/Quebec border. It encompasses an area of 35,523 square kilometres and contains a population of 1.2 million people.

The 1983 enrollment consisted of 63 lakes that were carried over from the 1982 program, 17 lakes that had been in a program in previous year(s), and 14 entirely "new additions". The Cataraqui Region Conservation Authority was instrumental in the recruitment of participants on 19 of the lakes in the 1983 program and in securing a commitment from individuals on another eight lakes to initiate a program in 1984.

Table 1.0: Lakes Sampled in 1983 Self Help Program

<u>LAKE</u>	<u>COUNTY(S)</u>	<u>TOWNSHIP(S)</u>
1. Ashby	Lennox & Addington	Ashby
2. Bagot (Long)	Renfrew	Bagot
3. Baptiste	Hastings	Herschel
4. Bark	Renfrew, Hastings Nipissing District	Jones, Bangor, Lyell, Wicklow
5. Bass	Leeds	Rear of Leeds & Lansdowne
6. Bennett	Lanark	Bathurst
7. Big Gull	Frontenac	Kennebec, Olden, Barrie, Clarendon
8. Big Rideau	Lanark, Leeds	S. Burgess, N. Burgess, S. Elmsley, N. Elmsley, Bastard
9. Black	Frontenac	Olden
10. Black Donald	Renfrew	Brougham
11. Bobs	Frontenac	Bedford
12. Brule (Wensley)	Frontenac	Miller
13. Buck - North Bay	Frontenac	Loughborough, Bedford, Storrington
14. Burr ridge	Frontenac	Bedford
15. Canoe	Frontenac	Bedford
16. Charleston	Leeds	Front/Rear of Yonge & Escott, Rear of Leeds & Lansdowne
17. Chippego	Frontenac	Hinchinbrooke
18. Collins	Frontenac	Storrington
19. Consecon	Prince Edward	Hillier, Ameliasburg
20. Cranesnest	Frontenac	Storrington
21. Crosby	Leeds	North Crosby
22. Crowe	Hastings, Peterborough	Marmora, Belmont

23. Dalhousie	Lanark	Dalhousie
24. Davern	Lanark	South Sherbrooke
25. Dempseys (Virgin)	Renfrew	Bagot & Blythfield
26. Desert	Frontenac	Loughborough
27. Devil	Frontenac	Bedford
28. Diamond	Hastings	Herschel
29. Dickey	Hastings	Lake
30. Dog	Frontenac	Storrington
31. Draper	Frontenac	Loughborough
32. Dropledge	Renfrew	Raglan
33. Eagle	Frontenac	Hinchinbrooke
34. Elbow	Frontenac	Hinchinbrooke
35. Eloida	Leeds	Rear of Yonge & Escott
36. Faraday (Trout)	Hastings	Faraday
37. Farren (Farrell)	Lanark	South Sherbrooke
38. Gananoque	Leeds	Rear of Leeds & Lansdowne, Front of Leeds & Lansdowne
39. Glanmire	Hastings	Tudor
40. Golden	Renfrew	North Algona
41. Gould	Frontenac	Loughborough
42. Grippen	Leeds	Rear of Leeds & Lansdowne
43. Gunter	Hastings	Cashel
44. Hambly	Frontenac	Portland
45. Hay Bay	Lennox & Addington	Fredericksburgh
46. Hicks	Hastings	Bangor
47. Indian	Leeds	South Crosby
48. Joeperry	Lennox & Addington	Effingham
49. Knowlton	Frontenac	Loughborough
50. Limerick	Hastings	Limerick

51. Little Cranberry	Leeds	Rear of Leeds & Lansdowne
52. Little Silver	Lanark	South Sherbrooke
53. Loughborough	Frontenac	Storrington, Loughborough
54. Lyndhurst	Leeds	Rear of Leeds & Lansdowne
55. Mackie	Frontenac	Miller
56. Mazinaw	Frontenac, Lennox & Addington	Abinger, Barrie
57. Meach	Hastings	McClure
58. Mississippi	Lanark	Drummond, Beckwith, Ramsay
59. Moira	Hastings	Huntingdon
60. Mosque	Frontenac	Miller, Clarendon
61. Muskrat	Renfrew	Westmeath, Ross
62. McKay		Regional Municipality of Ottawa-Carleton
63. Norway	Renfrew	Bagot & Blythfield
64. Olmsted (Jefferys)	Renfrew	Ross
65. Opinicon	Frontenac, Leeds	Bedford, Storrington, South Crosby
66. Otter	Frontenac	Loughborough
67. Otter	Leeds	Bastard, South Elmsley
68. Otty	Lanark	North Burgess, North Elmsley
69. Papineau	Hastings	Wicklow, Bangor
70. Paugh	Renfrew	Burns, Sherwood
71. Pike	Lanark, Leeds	North Burgess, North Crosby
72. Red Horse	Leeds	Rear of Leeds & Lansdowne
73. Robertson	Lanark	Lavant
74. St. Andrews	Frontenac	Hinchinbrooke
75. St. Peter	Hastings	McClure

76. Salmon Trout	Hastings	Monteagle
77. Sand	Leeds	South Crosby
78. Shabomeka	Frontenac	Barrie
79. Sharbot	Frontenac	Olden
80. Silver	Frontenac, Lanark	Oso, South Sherbrooke
81. Singleton	Leeds	Rear of Leeds & Lansdowne
82. Skootamatta	Lennox & Addington	Anglesea
83. South	Leeds	Front/Rear of Leeds & Lansdowne
84. Steenburg	Hastings	Tudor, Limerick
85. Sydenham	Frontenac	Loughborough
86. Temperance	Leeds	Rear of Yonge & Escott
87. Thirteen Island	Frontenac	Bedford, Hinchinbrooke, Loughborough, Portland
88. Troy	Leeds	South Crosby
89. Twin Sisters	Hastings	Marmora
90. Upper Beverley	Leeds	Bastard, Rear of Leeds & Lansdowne
91. West	Prince Edward	Hallowell
92. White	Lanark, Renfrew	Darling, Bagot & McNab
93. Whitefish	Leeds	South Crosby, Rear of Leeds & Lansdowne
94. Wollaston	Hastings	Wollaston

2.0 METHODS

For recreational lakes the most important and most easily measured water quality parameter is water clarity. Water clarity is determined by lowering a Secchi disc vertically into the water; the depth at which it disappears from view is a measure of water clarity. A Secchi disc is a circular steel plate 20 cm (8 inches) in diameter painted white and black in opposing quadrants (Figure 1).

Water clarity is affected by the amount of phytoplankton, i.e. microscopic algae, which inhabit a lake. As the amount of phytoplankton increases, the water becomes progressively more turbid and water clarity correspondingly declines. The amount of algae in a unit of water may be determined by enumerating the number of individual cells or algal colonies present under a microscope. However, this is a slow tedious procedure. To circumvent the need for labour intensive cell enumerations, a simpler method is employed. The amount of green pigment called chlorophyll a, which is a component of all green plants, is chemically measured. The amount of chlorophyll a in a sample of water is a measure of the amount of phytoplankton in the lake at the time of sampling.

Volunteers who contacted MOE to assist in the Self Help Program were provided with a sampling device, a Secchi disc, sample bottles and preservative, return shipping material including submission forms, and detailed sampling instructions. Each participant was assigned a sampling location usually at a central or open water site in the lake well removed from any localized shoreline influence. Samplers were instructed to undertake water clarity measurements weekly or bi-weekly during the ice-free season depending upon their availability at the lake.

Algae cease to grow in a lake because of insufficient light for photosynthesis at a depth approximated by twice the Secchi disc depth. Water samples were collected at the same time as water clarity measurements were made by lowering a narrow-mouthed, one-litre bottle in a weighted sample bucket to twice the Secchi disc depth measurement, i.e. the lower limit of the zone of phytoplankton growth.

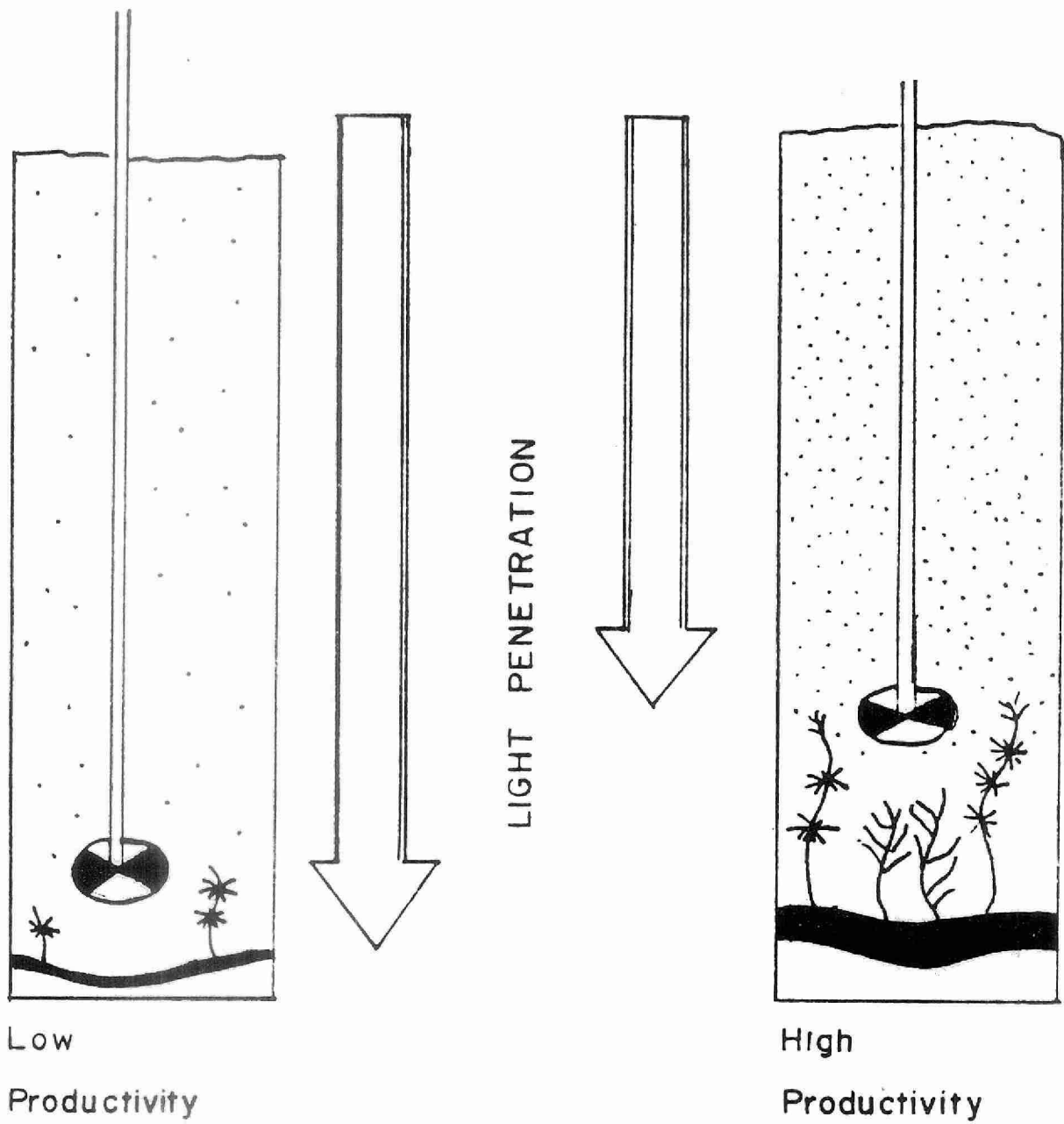


Figure 1 : Water clarity as measured by a Secchi disc.

Visibility decreases with increased algal densities.

The speed of lowering and raising the sampler was regulated by trial and error repetition so that the bottle just filled as it reached the surface. In this manner a composite sample equally representative of all depths from the measured water column was collected. The samples were preserved immediately after collection with 0.5 ml (five drops) of one half percent magnesium carbonate suspension to minimize degradation of chlorophyll pigment and were delivered as soon as possible, usually within a day or two, to the MOE laboratory at Kingston via COD shipment.

Water samples were filtered using 1.2 micron filter paper, the residue extracted with 90% acetone and the chlorophyll a concentrations determined spectrophotometrically according to standard methods of the Ministry of the Environment's Laboratory Services and Applied Research Branch.

The chlorophyll a values provide a close approximation of the algal population of a lake. In the following sections of this report the chlorophyll a values will be referred to simply as chlorophyll values.

Each sample was submitted with a Sample Submission Form which included information on the sampler and his address, the lake and location sampled, weather and water surface conditions, as well as the Secchi disc reading.

3.0 Results and Discussion

Appendix I presents the individual chlorophyll analyses and Secchi disc visibility readings for each of the 94 lakes. When the information is available, general data on the physical characteristics (watershed area, lake surface area, depth, volume, shoreline length, and the number of cottages and resorts) and selected water chemistry characteristics (phosphorus, nitrogen, alkalinity, and colour) are also presented.

The number of resorts includes both tourist establishments offering indoor accommodation and campgrounds. The figure following in brackets is the combined total of hotel or resort rooms, rental cabins or cottages, and tent or trailer sites for all the resorts on a given lake.

These ancillary data all may play a role in determining the productivity of a lake. The size of the watershed, for example, determines in part the amount of nutrients received by the lake from surface runoff from the surrounding land area. The number of cottages and tourist establishments may influence the supply of nutrients from artificial sources.

The mean chlorophyll values and mean Secchi disc visibility depths for 75 lakes with more than six sets of measurements each are plotted on a graph in Appendix II.

3.1 Physical Characteristics of the Lakes

The surface area of the lakes varies from 4.6 hectares for Dropledge Lake to 4,700 hectares for Big Rideau Lake. Mazinaw Lake is the deepest at 145 metres, while Eloida Lake with a depth of 1.5 metres is the shallowest lake. The range of other physical characteristics, watershed area, shoreline length, shape and volume also vary greatly.

3.2 Shoreline Development

Although the extent of shoreline development in terms of number of cottages and other units varies considerably, the development density, (i.e. a cottage, permanent residence, rental cabin, hotel room or tent and trailer site) exceeds one development unit per hectare of lake surface on only two lakes, Big Gull and the north basin of Dickey Lake. Based on our chlorophyll results and water clarity readings there is no obvious or apparent relationship between cottage development and water quality. Other factors, besides the potential artificial supply of nutrients from shoreline development, appear to predominate in determining the seasonal chlorophyll concentrations and Secchi disc visibilities in our lakes.

While sources other than the potential artificial supply of nutrients from shoreline development appear to predominate in determining the seasonal chlorophyll concentrations and Secchi disc visibility in our lakes, all nutrient inputs contribute to the water quality conditions of a lake. It is therefore important to limit the nutrient inputs to lakes associated with shoreline development to the maximum extent possible. Section 5 of this report outlines some of the ways cottagers can limit nutrient inputs and help protect lake water quality.

3.3 Water Chemistry Characteristics

3.3.1 Alkalinity

Alkalinity is a measure of the capacity of a lake to neutralize acidic inputs. It is therefore particularly useful in determining the sensitivity of a lake to acid rain. The table below ranks lakes according to their sensitivity on the basis of their total alkalinity.

<u>Total Alkalinity</u>	<u>Sensitivity</u>
0 - 2 mg/l	Extremely sensitive
2 - 10 mg/l	Moderately sensitive
10 - 25 mg/l	Low sensitivity
Greater than 25	Definitely not sensitive

Bark, Joeperry, Papineau, Paugh, St. Peter, and Skootamatta have alkalinities in the 2 - 10 mg range and fall into the moderately sensitive category. The other 88 lakes have alkalinities greater than 10 mg/l. Those six lakes which are in the moderately sensitive category and other lakes which have alkalinities less than 2 mg/l in the South-east Region are being monitored as part of the Acid Precipitation in Ontario Study (APIOS) Program.

3.3.2 Colour

The water colour of a lake is measured in Hazen units. Clear lakes may be defined as having colour less than 30 units. Only Consecon (32 Hazen units) and Elbow (52 Hazen units) have colour in excess of 30 Hazen units. These levels of colour are low enough not to interfere with water clarity or otherwise detract from the aesthetic attractiveness of their waters.

3.4 Lake Productivity

Algae and other aquatic plants, like their terrestrial counterparts, use the radiant energy of sunlight to convert nutrients, carbon dioxide and water into the chemical energy of plant tissue. The production of plant tissue is referred to as primary production. Primary productivity is controlled by the availability of the essential nutrient that is in the shortest supply relative to the nutritional requirements of algae and other plants. In our lakes and rivers phosphorus is usually the major nutrient least available to plants and hence phosphorus is the nutrient which normally controls and limits the amount of primary production in surface waters.

Lakes receive their natural supply of phosphorus from the atmosphere, in runoff water from the drainage basin and from internal lake processes. Prior to human settlement as we now know it, the long term supply of nutrients to a lake would have remained relatively constant with only slight year to year variations associated with climatic influences and natural perturbations such as forest fires.

Human settlement and subsequent activities have cumulatively served to increase the long term supply of nutrients to lakes. Atmospheric inputs of phosphorus have undoubtedly increased. Nutrients carried to lakes in runoff water have increased as a result of logging, the removal of vegetation associated with recreational shoreline development and the type and intensity of agricultural cropping and livestock management practices occurring within a drainage basin. Similarly recreational development has imported human wastes and fertilizers to the shorelines of lakes as well as increasing the disturbance and resuspension of nutrients in lake sediments. Control to the extent possible, of these non-natural phosphorus supplies is one of the most important factors in the protection and maintenance of good water quality in our recreational lakes.

To avoid nuisance levels of algae in lakes, average total phosphorus concentrations for the ice-free period should not exceed 20 µg/l. Nineteen of the 91 lakes for which total phosphorus concentrations are provided have concentrations greater than 20 µg/l. Nuisance levels of algae, as reflected by chlorophyll concentrations, however, were encountered in only two of those lakes, Dog and Muskrat. Both Dog and Muskrat have total phosphorus concentrations greater than 30 µg/l. If the N:P (nitrogen to phosphorus) ratio is less than 10:1 it is possible that nitrogen is the limiting nutrient for plant growth in a lake. This was not the case for any of the lakes in the 1983 Self Help Program.

From the results of the program, it is apparent that although algae growth is directly related to nutrient inputs, it also varies according to climatic conditions and varies in intensity in different lakes at different times of the year.

In order to distinguish between changes in water quality that may be a result of man's activities and the natural season to season and year to year variations that occur, it is essential to accumulate long term data from sampling programs with sufficient regularity of sampling to define these seasonal and annual fluctuations in productivity.

The long term sampling that is being conducted by the volunteers in the Self Help Program is resulting in the accumulation of a data base on an increasing number of lakes that should begin to facilitate this essential understanding.

3.4.1 Seasonal or Temporal Variability in Chlorophyll Concentrations

The growing season for agricultural crops in the Southeastern Region extends from April 20 to October 30. This interval closely approximates the growing season of aquatic plants and algae in our lakes and rivers. Because the volunteer nature of the Self Help Program depends upon the availability of cottagers at their lakes, most lakes are sampled regularly only during the summer months of June, July and August. Although most samplers were able to extend their sampling program to September and even into October and November, few programs had a start-up date before the beginning of June. The lack of sampling at either end of the growing season may introduce a bias to the results for lakes that exhibit a seasonal periodicity in their chlorophyll concentrations.

A bias is a systematic error introduced into a sampling regime that favours one outcome over another.

A slight indication of a weak spring pulse in algae (chlorophyll) levels is evident in the 1983 results for Bark, Bass, Big Gull, Mackie, and St. Andrews Lakes. On the other hand, for most lakes in this year's program, it appears that algal production more characteristically increases throughout the summer months and tends to attain a maximum during late summer or early fall. This is particularly true for the more productive bodies of water such as Hay Bay, Moira Lake, Troy Lake, Muskrat Lake, and South Lake but is also evident in less productive lakes such as Glanmire, Consecon, Salmon Trout and White. For lakes that characteristically incur a spring pulse or a fall bloom in their algal population, sampling programs that involve the summer months only are not necessarily as representative of the lake's productive status as a sampling program that encompasses the entire growing season.

In Table 3-1 below, data selected from the aforementioned lakes illustrates the influence of spring and fall sampling on the validity of the data sets. In the table the mean chlorophyll concentrations for

only the samples taken during June, July and August are presented along with mean chlorophyll concentrations for the entire sampling periods.

Table 3-1: Comparison of mean chlorophyll concentrations based on an extended sampling season with means based on June, July, August sampling

Lake	Entire Season Average chlorophyll (µg/l)	June, July, August Average chlorophyll (µg/l)
Bark	1.35 (May 25 - Oct. 4)	1.25 (June 9 - Aug. 21)
Bass	0.84 (May 23 - Oct. 16)	0.69 (June 19 - Aug. 28)
Big Gull	2.05 (May 15 - Oct. 10)	1.83 (June 23 - Aug. 16)
St. Andrews	2.22 (May 28 - Aug. 28)	1.69 (June 4 - Aug. 28)
Hay Bay	11.55 (Mar. 14 - Sept. 18)	11.49 (June 22 - Aug. 23)
Moirs - E	10.08 (May 28 - Oct. 9)	7.45 (June 11 - Aug. 10)
Moirs - W	4.53 (May 31 - Aug. 24)	4.93 (June 8 - Aug. 24)
Troy	7.13 (May 23 - Oct. 2)	6.94 (June 12 - Aug. 28)
South	4.13 (June 24 - Sept. 29)	5.60 (June 24 - Aug. 18)
White	2.88 (June 13 - Oct. 19)	2.30 (June 13 - Aug. 31)
Glanmire	3.35 (June 22 - Oct. 16)	1.72 (June 22 - Aug. 7)
Consecon	3.85 (July 10 - Oct. 2)	2.76 (July 10 - Aug. 28)
Salmon Trout	3.07 (May 29 - Oct. 9)	2.54 (June 19 - Aug. 21)

It is evident, that as a result of seasonal variation, the months that a lake is sampled can and do influence the outcome of the sampling program. This does not mean that a sampling program only during June, July and August is without value. It does provide an indication of the water quality during the prime recreational season months. What is important is that the duration and regularity of a sampling program must be taken into account during any comparative interpretation of the data.

The comparison of the sample results for the east and west basin of Moira Lake illustrates this point. The 1983 average chlorophyll concentration for the east basin is 10.1 µg/l compared to an average concentration of 4.53 µg/l in the west basin. These mean values tend to indicate that the east basin of Moira Lake is more productive than the west basin. Reference to the entire data set for these two waters will reveal that sampling in the west basin terminated on August 24

while the east basin average includes results for September 5 and October 9 samples, both with extremely high chlorophyll levels. The lack of comparability in the sampling intervals for the two basins in Moira Lake makes the comparison of the east and west basin inappropriate without due consideration given to the differences in the sampling regimes. Obviously the same precaution applies when making comparisons between the annual means from year to year for a lake.

While sampling programs that encompass the normal growing season are necessary to confirm the presence or absence of fall/spring peak chlorophyll concentrations, it must be recognized that peaks can occur at any time of the year. The 1983 data sets in Appendix I include numerous examples of lakes that peak during the summer months. Examples of these lakes include Norway (8.0 µg/l, June 11), McKay (18.8 µg/l, June 27), Gananoque (7.8 µg/l, July 24), Sharbot East, McCrimmon Bay (14 µg/l, July 18), Droplodge (23.4 µg/l, August 26), Elvida (22.8 µg/l, August 25), and Whitefish (17.4 µg/l, September 9). These concentrations represent algal levels substantially higher than the seasonal average for these lakes and may be indicative of bloom conditions.

An algal bloom is a rapid proliferation of algae resulting in the production of a dense standing crop (i.e. large numbers at one time). Blooms occur under conditions of prolonged calm, warm, sunny weather if there is a sufficient pool of nutrients available in the lake to support a sustained period of rapid growth and cell division. Blooms are frequently discernible visually as a discolouration of the water or the appearance of a scum on the surface of the lake. Under bloom conditions the aesthetic attractiveness and recreational use of the water are usually diminished.

The 1983 data for other lakes, especially those at the low end of the productivity scale, reveal that many lakes have fairly uniform chlorophyll concentrations throughout the sampling period. Examples of these lakes are included in Table 3-2.

Table 3-2: Mean, range and standard deviation for chlorophyll concentrations for selected lakes that exhibited relative uniformity over an extended sampling season
Number of samples (n) collected is also presented

Sampling Season	Lake	Range	Mean \pm 1 Std. dev
May 23 - Sept. 5	Farren	0.7 - 1.6	1.15 \pm .33, n = 8
May 15 - Nov. 24	Dickey South	0.5 - 1.6	0.80 \pm .26, n = 19
May 1 - Oct. 2	Dempseys	0.9 - 1.8	1.30 \pm .28, n = 10
May 13 - Oct. 16	Bass	0.6 - 1.4	0.84 \pm .27, n = 12
May 15 - Oct. 9	Bark	0.9 - 2.1	1.38 \pm .37, n = 9
June 19 - Oct. 10	Davern	0.9 - 2.6	1.29 \pm .46, n = 11

Although algal blooms typically occur in lakes with seasonal average chlorophyll concentrations greater than 5 $\mu\text{g/l}$, they are not entirely confined to these lakes, nor are blooms necessarily detected by even an extensive sampling program. The sampling interval on Davern Lake failed to detect a bloom which is reported in our complaint file to have occurred on Davern Lake between June 10 and June 12. Nuisance accumulations of algae may have occurred and gone undetected by the Self Help sampling on other lakes as well.

3.4.2 Spatial Variability in Chlorophyll Concentrations

While the Self Help Program results provide a good and useful approximation of the productivity of the body of water, the data is most representative of the actual conditions of lakes of a simple configuration (i.e. a round lake). Complex lakes with many bays or more than one basin can have considerable within lake variability of water quality.

An illustration of within lake differences shows up in the 1983 data for Steenburg Lake. Three bays of Steenburg Lake (South, North and West) were all sampled on the same dates, as shown in Table 3-3.

Table 3-3: Variability in chlorophyll concentrations between three bays at Steenburg Lake

Date	Chlorophyll concentration ($\mu\text{g/l}$)		
	North Bay	West Bay	South Bay
June 12	1.1	1.2	1.8
June 19	2.9	2.5	2.5
July 3	1.4	1.6	3.4
July 17	1.2	1.5	2.6
Aug. 1	0.9	0.6	0.6
Aug. 7	1.6	1.5	1.6
Aug. 15	1.7	2.0	1.4

While the average chlorophyll results from the three bays generally demonstrate similar water quality conditions, there is within the 1983 data set an indication of one of the bays responding differently to an event. On June 19 an algal pulse or peak of comparable magnitude showed up in all three bays (i.e. south 2.5 $\mu\text{g/l}$, west 2.5 $\mu\text{g/l}$ and north 2.9 $\mu\text{g/l}$). On the next sampling date, July 3, the chlorophyll levels had dropped back to 1.4 $\mu\text{g/l}$ in the north bay and 1.6 $\mu\text{g/l}$ in the west bay approximating the seasonal averages for these bays. In contrast, the chlorophyll level in the south bay had increased slightly by July 3rd to 3.4 $\mu\text{g/l}$ and remained above the seasonal average again on the July 17th sampling date. By August 1, all three bays again had similar chlorophyll levels of 0.9 $\mu\text{g/l}$ in the north, 0.6 $\mu\text{g/l}$ in the south and 0.6 $\mu\text{g/l}$ in the west bay. It is evident that within bays of a lake algal pulses of different durations occur.

While the Steenburg Lake data set offers a good illustration of the type of water quality differences which occur within lakes, the 1983 Self Help Program results contain numerous examples of far more dramatic within lake differences of productivity. Reference to the data sets for the various basins of Bobs Lake and between the main basin and Long Reach of Dog Lake will reveal that each of these water bodies contain their own distinct water quality conditions.

These are large irregularly-shaped lakes of more or less discrete bays and basins. Similarly the data sets for Loughborough, Sharbot and Mosque show different levels of productivity. Lakes such as Loughborough and Sharbot which consist of two distinct basins are in fact separate lakes with their name being the most significant factor which they share in common.

3.4.3 Annual Variability in Chlorophyll Concentrations

In the preceding sections of this report, the 1983 Self Help data have been examined and discussed primarily for the purpose of providing a better understanding of the natural variability of lake water quality as it occurs within a lake within a single season.

A matter of greater interest pertains to the variability which occurs from year to year within a lake. Our Self Help data base now includes a substantial number of lakes for which continuous data have been gathered over a period of several consecutive years. This information is summarized in Table 3-4.

As in the case of the within lake data, caution must be taken in attempting to place too much interpretation on those data sets since the year to year sampling efforts have introduced some seasonal bias into the data sets. It is impossible in a program of this nature to exactly duplicate sampling programs from year to year. Nonetheless, these data contain much valuable information which is increasingly expanding our understanding of long term water quality conditions.

One of the most obvious findings of this comparative summary of the chlorophyll results is that 32 of 52 lakes experienced dramatically lower chlorophyll concentrations during 1983 than in any previous year over their period of record.

A review of the monthly precipitation records and hours of bright sunshine recorded by the meteorological station at Kingston Airport, Kingston, Ontario, suggests that the amount and distribution of

Table 3-4: Mean values for chlorophyll concentrations ($\mu\text{g/l}$)
for lakes in the Southeastern Region of Ontario
with six or more years of at least six measurements
each per year

Lake	83	82	81	80	79	78	77	76	75	74	73
Baptiste	1.1		2.6	3.0	1.8	1.6	2.0		2.1		
Bass	0.8	1.2	1.7	2.7	1.7	1.5	1.0				
Big Gull	2.1	1.7				2.0	2.0	2.1	3.3		
Big Rideau	3.1		2.5		2.3	2.0	1.4	2.3	2.1		
Black	1.4	1.4	1.7		1.5	1.6	1.3	1.4			
Bobs - Buck Bay	2.2		2.3	4.5	3.3	3.0	3.6	2.6	4.8		2.8
- Mud Bay	2.7	4.0	4.0	4.9			2.5	4.0	5.1		
Brule	0.7	0.9	1.2	1.4	1.2			1.9			
Buck - North Bay	1.7	2.1	2.4	3.1	3.7	3.3	2.3	3.5	2.6		
Charleston											
- Big Water	2.2	3.3	3.9	2.6	2.7	2.2	2.3		2.9		
- Deep Water	2.1	2.8	4.2	2.4	2.4	2.3	2.2	3.8	3.0		
- Webster Bay	1.5	2.5	3.5	2.6	2.1	2.2	2.2				
- Western Water	1.9	2.6	3.7	2.8	3.1	2.0					
- near Goose Is.	1.7	2.3	3.3	2.3	2.1	1.9					
Crosby	1.5	2.1	2.5	2.5					3.6	3.3	
Crowe	1.6	1.6	2.0	2.2	3.2	2.1		3.3			
Desert	1.4	1.3	2.3	2.3	2.0	1.7	1.7		2.6		
Devil	1.5	1.8	2.3		1.7	1.9	1.7	1.5	2.2	1.6	
Dickey											
- North Basin	1.1	1.2	1.3	1.3			1.1		1.3	1.4	1.2
Eagle	1.7	1.8	2.0	2.9	2.2		1.3		2.4		
Gananoque	3.2	3.5	4.6	5.3	3.1	4.7	3.1				
Glanmire	3.4	1.3	6.1		3.4	3.0	1.9	3.3	6.3		
Grippen	3.0	3.3	4.6	4.0	2.5	3.1	2.1	3.1	2.6		
Hay Bay	11.2	11.3	14.2	19.9	16.6	12.1	16.6				
Indian	1.6	2.2		3.0			2.0		3.6		
Limerick	0.9	1.2		1.5	1.4	1.3	1.2	1.1	1.1		
Loughborough											
- East Basin	2.2	3.1	4.9	5.1	3.6	3.6	3.7	2.1	4.6	2.7	3.3
- West Basin	1.6	1.4	2.5	2.5	2.0	1.8	2.2	2.5	2.0		
Mackie	2.1	2.0	2.3	4.4	4.6	2.5	1.8	1.9	0.5		
Mississippi	1.6	3.6	4.9	3.0	2.1	2.0	1.8		9.1	2.0	2.2
Moir											
- East Basin	10.1	11.3	5.1			8.0	7.2			9.2	
- West Basin	4.6				6.5	8.1				9.2	
Mosque											
- Main Basin	0.9	1.4	1.4	1.6	1.7	1.7	1.8				
- West Basin	1.4	1.3	1.7		3.2	3.7	2.9	4.6			
Muskrat	9.3	9.9	19.6		7.1	8.0	10.3				
Olmstead	1.1	1.2	2.0	2.6	1.2	1.5	1.4				
Opinicon	2.2	2.7	3.1	3.9	3.7	3.6	3.6		3.1		
Otter	1.4	1.5	2.1	2.3	2.3	2.0	2.1	2.4	1.6		
Otty	1.3	2.2	2.2	2.7	2.1	2.1	1.7	1.8	2.1	1.1	2.9
Pike	2.2	3.6	3.6	4.3	4.0	2.8	4.0	4.4	3.4		
Redhorse	2.9	2.9	5.2	6.1	4.4				4.0		
Robertson	0.8	0.9	1.0	2.3	2.4	1.5	1.3				
Salmon Trout	3.1	2.4	3.7	11.7	7.4	5.0	4.1	6.6		1.4	
Sharbot											
- East Basin	2.3	1.7		3.2	2.0	1.9			2.6		
- West Basin	1.8	1.8	2.1	2.4	2.1	1.8	1.7	2.0	2.7		
Silver	1.3	1.6	2.0	2.4	1.8	1.8	1.6		1.7		
St. Andrews	2.2	2.6	8.2	10.5			6.8				
St. Peter	1.0			2.2	1.8	1.6	1.1	1.8			
Sydenham	1.9			3.2	3.0	2.1	3.4				
Temperance	1.8	4.5	7.8	6.0	3.1	2.8	8.9	3.6			
Troy	7.1	5.6	4.2	6.7	8.0	7.4	6.9				
White	2.9	3.4	3.2	5.3	3.0	3.7	3.6	6.4	3.8	2.2	4.3

rainfall and sunshine may be influential in determining the availability of nutrient supply and the growth of algae for a given year. This information is summarized for the growing season months in Table 3-5.

Table 3-5: Summary of monthly precipitation (mm) and bright sunshine (hrs) for the growing season months recorded by Environment Canada at Kingston

Month	1983		1982		1981		1980		1979		1978		1977	
	ppn	sun	ppn	sun	ppn	sun	ppn	sun	ppn	sun	ppn	sun	ppn	sun
April	116	126	57	216	77	168	154	163	115	202	65	202	61	228
May	85	182	118	206	89	239	34	274	97	229	57	231	36	318
June	40	302	107	203	80	218	65	223	28	240	36	272	62	237
July	72	307	117	320	75	281	123	255	28	281	34	298	41	261
Aug	99	253	76	219	109	244	82	240	79	255	89	245	139	230
Sept	51	210	71	177	180	112	92	176	157	169	70	185	107	108
Oct	142	163	57	163	91	127	114	142	107	M	73	152	84	165

Hours of bright sunshine data are missing for the month of October 1979.

Fewer hours of sunshine during the initial stages of the growing season in April and May and/or reduced amount of rainfall received during the mid months of the growing season, June, July and August, may have accounted for the lower levels of productivity recorded for the lakes during 1983. The 210 hours of bright sunshine during September, 1983 may have accentuated high chlorophyll levels in those lakes that peaked in the fall.

Only Big Rideau Lake experienced a higher than previous seasonal mean chlorophyll concentration in 1983. A seasonal mean concentration of 3.1 µg/l was derived with the inclusion of an atypically high value of 10.2 µg/l recorded on August 29. This high chlorophyll concentration may have resulted from the entrainment of vegetative detritus in the sample or an anomaly in algal density due to wind drift or other factors. Of course, as stated above, any lake can experience periodic real peaks in chlorophyll level from time to time.

Seventeen of the 52 lakes in Table 3-4 had their highest yearly chlorophyll average in 1980. The reason for this is not readily evident but it is apparent that annual variability in chlorophyll concentrations of a lake is a regularly occurring phenomenon.

Some lakes appear to have stable enough long term averages to already permit the detection of any trends that might develop in the future. Examples of these lakes are Diamond, Dickey (north basin), and Limerick. For most of the other lakes the variability between annual means are too large to allow subtle changes in water quality to be evident. However, the long term data, such as are being provided through this program, will assist in completing a trend in time analysis for all lakes and in determining the extent of the natural variability in their water quality conditions from year to year.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The information on water clarity and chlorophyll concentrations obtained through the Cottagers' Self Help Program indicate that, in general, most of our lakes have excellent water quality for recreational use, although there are some exceptions (viz. Hay Bay, Dog Lake, Muskrat Lake and Moira Lake). In these lakes reduced water clarity and high chlorophyll concentrations suggest that re-occurring algal blooms and other symptoms of advanced eutrophy may restrict recreational activities on the lakes from time to time.

Although primary productivity is directly related to nutrient input, it is apparent that algae growth also varies with climatic conditions and varies in intensity in different lakes at different seasons of the year. Algal densities may also vary in different basins of complex lakes, i.e. lakes that are composed of a number of discrete basins or bays which may act independently from a water quality point of view.

Although a number of lakes have now accumulated several years of consecutive data, only a few lakes have sufficient uniformity in their annual means against which to evaluate any future changes in their water quality. Considering the fluctuations from year to year in the annual mean chlorophyll concentrations for other lakes, continued monitoring is required to establish their long term stable condition or to identify if a gradual shift in trophic state may be occurring. The ability to identify trends in water quality is important. It would permit the implementation and assessment of the effectiveness of corrective or preventive measures such as restrictive land use zoning and other limitations on shoreline development for the protection of lake water quality.

With the many thousands of lakes in the province, the Ministry of the Environment does not have the fiscal or logistical resources to monitor their water quality on a continuing basis without the assistance of the public with the collection of the samples and acquisition of field data through the Cottagers' Self Help Program.

It is recommended that volunteers consider a continuation of their participation in the Self Help Program during 1984.

In order to avoid the possible introduction of seasonal biases into the results, sampling should be carried out regularly and consistently (i.e. weekly or bi-weekly) throughout the season. A program should encompass at least the three prime summer recreational months of June, July and August and preferably extend over a longer season, depending upon the sampler's availability at the lake.

Cottagers who are located on lakes that are not currently enrolled in the Self Help Program, are invited to contact the Ministry of the Environment for advice and assistance in establishing a program. The establishment of a Self Help Program not only provides a mechanism to objectively monitor lake water quality, but it also provides a means to increase understanding about water quality and to develop a heightened environmental awareness concerning the protection of a lake, not only for the present generation, but for those to follow.

For advice or information on establishing a program write Self Help Program, Ministry of Environment, P. O. Box 820, Kingston, Ontario K7L 4X6 or phone (613) 549-4000.

5.0 PROTECTION OF THE LAKE

Of the few management options available for dealing with water quality problems the most effective is prevention. Nitrogen and phosphorus have been identified as critical elements in eutrophication. The nearshore region of a watershed contributes a disproportionate share of phosphorus and nitrogen relative to its area because of its proximity to the lake. It is important that cottagers and other waterfront owners do everything possible to ensure that their activities do not allow these nutrients to reach the lake. Following is a list of suggestions:

- 1) New cottage construction and septic systems should be sited well back from the water. This practice allows algae-producing nutrients in runoff and seepage from tile beds to be absorbed by soil and vegetation. Setbacks have the additional advantage of preserving the scenic beauty of the shore by preventing development from intruding unnaturally on the lake.
- 2) Site preparation and building activities should be carried out in a manner which will minimize disruption to the soil and vegetation. All areas that are exposed during construction should be replanted as soon as possible to prevent runoff and erosion.
- 3) Sewage disposal systems must be constructed in compliance with Provincial Regulations and be properly maintained. Seepage of leachate from improperly located or malfunctioning septic tank fields is suspected of contributing significant quantities of phosphorus to some heavily cottaged lakes. Septic tanks should be pumped out every three years and the area over the tile bed should be grassed and left open to sun and wind to encourage evapotranspiration. If a problem with the system is apparent, for example ponding; or suspected; contact the local District Office of the Ministry of the Environment for guidance.

- 4) Minimize the quantity of water used for domestic purposes to avoid overloading the septic system. Dishwashers and automatic washing machines use large quantities of water. Moreover, a dishwasher detergent contains a high amount of phosphates which should be avoided for cottage use. Laundry should be taken to the city.
- 5) Do not fertilize lawns. Excessive fertilizer will wash off into the lake and may promote unwanted nuisance aquatic growths.
- 6) The shallow nearshore or "littoral" zone supports most of the plants and animal life found in the lake. Disruption of any part of this ecosystem threatens the entire cycle of life in the lake. In particular, habitat for fish and other wildlife may be destroyed. Before undertaking any shoreline activities such as dredging or filling, contact the Ministry of Natural Resources for advice. In fact, prior approval may be required under the Navigable Waters Protection Act or the Fisheries Act.
- 7) Remember that these efforts to protect the lake will result in increased enjoyment by all.

6.0 APPENDIX I

Individual lake water quality results summary sheets

Notation

Chloro = chlorophyll a
Secchi = Secchi disc visibility depth
Std. dev = standard deviation

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Ashby LAKE	Lennox & Addington COUNTY			Ashby TOWNSHIP(S)		
Watershed Area:	36.82	km ²		Shoreline	:	20.3 km
Surface Area :	259	ha		Cottages	:	84
Maximum Depth:	36.6	m		Resorts	:	0
Volume :	31.11	x 10 ⁶ m ³		% Crown Land :		70

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	:	5	Alkalinity (mg/l)	10.1
Total Nitrogen (µg/l)	:	293	Colour	5

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.1	5.9	5.6	5.9	5.6	6.4	6.8	6.3			
Min.											
Secchi (m)	4.9	5.0	3.9	4.6	3.7	5.8	5.8	5.3			
Mean Chloro.											
(µg/l)	1.6	1.1	1.2	1.7	1.4	1.5	1.3	1.2			
Max. Chloro.											
(µg/l)	1.9	1.4	1.7	2.3	2.2	2.8	2.7	1.6			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 25	5.2	1.9			
July 5	4.9	1.4			
Sept. 10	<u>5.2</u>	<u>1.5</u>			
Mean	5.10	1.60			
Std. dev.	0.17	0.26			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bagot (Long) LAKE	Renfrew COUNTY	Bagot TOWNSHIP(S)
Watershed Area:	km ²	Shoreline : 9 km
Surface Area : 56	ha	Cottages : 28
Maximum Depth : 12.2	m	Resorts : 0
Volume : 2.62	x 10 ⁶ m ³	% Crown Land : 70

WATER CHEMISTRY 19

Total Phosphorus (µg/l) : Alkalinity (mg/l)
Total Nitrogen (µg/l) : Colour

1983¹ 1982 1981 1980 1979 1978 1977 1976 1975 1974 1973

Mean
Secchi (m) 3.0

Min.
Secchi (m) 3.0

Mean Chloro.
(µg/l) 2.2

Max. Chloro.
(µg/l) 2.2

¹ based on less than 6 measurements
² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 3	<u>3.0</u>	<u>2.2</u>			
Mean	3.0	2.2			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Baptiste LAKE	Hastings COUNTY	Herschel TOWNSHIP(S)
Watershed Area: 717 km ²	Shoreline : 62 km	
Surface Area : 2125 ha	Cottages : 506	
Maximum Depth: 31.4 m	Resorts : 15 (113)	
Volume : 112.73 x 10 ⁶ m ³	% Crown Land : 50	

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	: 11	Alkalinity (mg/l)	10.6
Total Nitrogen (µg/l)	: 287	Colour	12

	<u>1983</u>	<u>1982</u> ¹	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u> ¹	<u>1975</u>	<u>1974</u> ¹	<u>1973</u>
Mean											
Secchi (m)	4.2	3.6	4.0	3.5	4.5	4.3	4.0	3.3	3.2	3.4	
Min.											
Secchi (m)	3.8	3.2	2.7	3.1	3.7	3.5	3.2	3.0	2.4	2.2	
Mean Chloro.											
(µg/l)	1.1	1.6	2.6	3.0	1.8	1.6	2.0	2.1	2.1	0.4	
Max. Chloro.											
(µg/l)	1.6	1.7	8.6	7.5	3.6	3.1	4.0	2.6	2.7	0.5	

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
NE Basin			SW Basin		
June 22	4.0	0.7	Aug. 6	4.1	1.5
July 28	4.1	1.5	Aug. 25	4.1	1.0
Aug. 6	-	1.6	Oct. 31	<u>4.4</u>	<u>1.3</u>
Aug. 3	4.6	0.6			
Aug. 25	3.8	0.9	Mean	4.20	1.27
Sept. 3	4.3	1.0	Std. dev.	0.17	0.25
Oct. 31	<u>4.6</u>	<u>0.8</u>			
Mean	4.23	1.01			
Std. dev.	0.33	0.39			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bark LAKE	Renfrew, Hastings COUNTY		Jones TOWNSHIP(S)	
Watershed Area:	2722	km ²	Shoreline :	90 km
Surface Area :	3799	ha	Cottages :	25
Maximum Depth:	87.5	m	Resorts :	2 (135)
Volume :	3324	x 10 ⁶ m ³	% Crown Land :	75

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	10	Alkalinity (mg/l)	4.1
Total Nitrogen (µg/l)	:	271	Colour	12

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ¹	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.9	3.7	4.1	4.6			5.7				
Min.											
Secchi (m)	2.7	2.7	3.3	3.0			4.5				
Mean Chloro.											
(µg/l)	1.4	1.2	1.3	1.5			1.0				
Max. Chloro.											
(µg/l)	2.1	1.9	1.8	1.9			1.9				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 25	3.0	2.1			
June 9	2.7	1.1			
June 20	4.1	1.4			
July 5	3.5	0.9			
July 20	4.1	1.7			
Aug. 3	-	1.1			
Aug. 21	3.4	1.3			
Sept. 8	4.9	1.2			
Oct. 9	<u>5.0</u>	<u>1.6</u>			
Mean	3.94	1.38			
Std. dev.	1.02	0.37			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bass	Leeds	Rear of Leeds
LAKE	COUNTY	& Lansdowne TOWNSHIP(S)
Watershed Area:	km ²	Shoreline :
Surface Area :	ha	Cottages :
Maximum Depth:	m	Resorts :
Volume :	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	12	Alkalinity (mg/l)	83
Total Nitrogen (µg/l)	:	399	Colour	6

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	6.5	6.0	5.9	6.5	4.7	5.9	6.6				
Min.											
Secchi (m)	5.2	4.6	4.6	4.6	4.0	4.9	4.9				
Mean Chloro.											
(µg/l)	0.8	1.2	1.7	2.1	1.7	1.5	1.0				
Max. Chloro.											
(µg/l)	1.4	2.3	2.8	3.6	2.2	2.6	1.5				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 23	7.0	1.4			
May 29	6.1	1.1			
June 19	8.2	0.6			
June 26	7.0	0.7			
July 6	7.6	0.6			
July 24	5.8	0.8			
Aug. 1	5.8	0.6			
Aug. 7	5.2	-			
Aug. 14	6.1	0.9			
Aug. 28	6.4	0.9			
Sept. 11	6.7	1.2			
Sept. 25	6.1	0.6			
Oct. 16	<u>5.8</u>	<u>0.7</u>			
Mean	6.45	0.84			
Std. Dev.	0.83	0.27			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bennett LAKE	Lanark COUNTY	Bathurst TOWNSHIP(S)
Watershed Area: 260	km ²	Shoreline : 35 km
Surface Area : 513	ha	Cottages : 165 + 1 house
Maximum Depth: 12.2	m	Resorts : 2(13)
Volume : 17.67	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	13	Alkalinity (mg/l)	82
Total Nitrogen (µg/l)	:	489	Colour	29

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u> ¹	<u>1978</u> ¹	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.9			3.3	2.7	3.3			3.0		
Min.											
Secchi (m)	2.3			2.4	2.0	2.3			2.0		
Mean Chloro.											
(µg/l)	5.4			4.4	6.2	4.6			5.1		
Max. Chloro.											
(µg/l)	10.6			6.4	12.6	4.9			9.5		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 24	2.9	3.5			
Aug. 14	3.4	10.6			
Sept. 5	<u>2.3</u>	<u>2.2</u>			
Mean	2.87	5.43			
Std. dev.	0.55	4.52			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Big Gull (Clarendon)	Frontenac	Kennebec, Olden Barrie, Clarendon TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area: 137	km ²	Shoreline : 89 km
Surface Area : 236	ha	Cottages : 280 (1974)
Maximum Depth: 26	m	Resorts : 10 (156)
Volume : 91.97	x 10 ⁶ m ³	% Crown Land: 25

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	15	Alkalinity (mg/l)	28
Total Nitrogen (µg/l)	:	401	Colour	20

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ¹	<u>1979</u> ¹	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.7	3.9		3.7	4.1	4.6	4.6	4.6	3.4		
Min.											
Secchi (m)	2.7	1.7		3.7	3.2	3.8	3.7	3.4	2.3		
Mean Chloro.											
(µg/l)	2.1	1.7		2.7	2.0	2.0	2.0	2.1	3.3		
Max. Chloro.											
(µg/l)	3.7	2.6		2.7	2.5	4.7	3.2	3.5	5.9		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 15	2.7	3.2			
May 23	2.9	3.7			
June 23	2.9	2.7			
July 9	4.3	1.5			
July 12	3.8	1.6			
July 18	4.1	1.5			
July 22	4.4	1.3			
Aug. 2	3.8	1.9			
Aug. 16	3.5	2.3			
Sept. 6	3.8	-			
Oct. 3	4.0	1.4			
Oct. 10	3.8	1.4			
Mean	3.67	2.05			
Std. dev.	0.56	0.82			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Big Rideau LAKE	Lanark, Leeds COUNTY	S. Burgess, N. Burgess, S. Elmsley N. Elmsley Bastard TOWNSHIP(S)
Watershed Area: 478.9	km ²	Shoreline : 172 km
Surface Area : 4700	ha	Cottages : 1063+12 houses
Maximum Depth: 95	m	Resorts : 12(621)
Volume : 799.97	x 10 ⁶ m ³	% Crown Land : 5

WATER CHEMISTRY 1981

Total Phosphorus (µg/l)	:	25	Alkalinity (mg/l)	94
Total Nitrogen (µg/l)	:	368	Colour	5

	<u>1983</u>	<u>1982</u>	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.9		3.3		4.4	4.5	4.0	4.1	4.6		
Min.											
Secchi (m)	2.6		3.2		3.7	3.4	3.0	2.6	3.0		
Mean Chloro.											
(µg/l)	3.1		2.5		2.3	2.0	1.4	2.3	2.1		
Max. Chloro.											
(µg/l)	10.2		2.9		2.9	3.7	2.7	4.1	9.3		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 29	3.0	4.4			
Aug. 17	2.7	1.3			
Aug. 29	4.0	10.2			
Sept. 13	2.6	2.6			
Oct. 5	2.7	1.5			
Oct. 19	2.7	2.7			
Nov. 9	2.7	0.8			
Nov. 23	<u>3.0</u>	<u>1.3</u>			
Mean	2.93	3.10			
Std. dev.	0.46	3.09			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Black LAKE	Frontenac COUNTY	Olden TOWNSHIP(S)
Watershed Area: 4.61	km ²	Shoreline : 3.6 km
Surface Area : 40	ha	Cottages : 22 (1974)
Maximum Depth: 21.0	m	Resorts : 1(6)+(191) Prov. Park
Volume : 4.13	x 10 ⁶ m ³	% Crown Land : 60

WATER CHEMISTRY 19

Total Phosphorus (µg/l) : Alkalinity (mg/l)
Total Nitrogen (µg/l) : Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ¹	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.4	4.7	5.1	4.7	5.2	4.9	5.0	4.2			
Min.											
Secchi (m)	3.4	4.3	4.6	3.3	4.9	4.3	3.4	3.1			
Mean Chloro. (µg/l)	1.4	1.4	1.7	2.1	1.5	1.6	1.3	1.4			
Max. Chloro. (µg/l)	2.2	2.1	2.6	3.8	2.3	2.6	3.1	2.1			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 8	3.4	2.2			
June 22	4.6	1.1			
July 6	5.5	2.2			
July 20	4.6	1.3			
Aug. 3	4.1	0.8			
Aug. 17	3.8	1.0			
Aug. 31	4.6	-			
Sept. 4	<u>4.3</u>	<u>1.1</u>			
Mean	4.36	1.39			
Std. dev.	0.63	0.58			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Black Donald LAKE	Renfrew COUNTY	Brougham TOWNSHIP(S)
Watershed Area: 7393	km ²	Shoreline : km
Surface Area : 1550	ha	Cottages : 103
Maximum Depth: 44	m	Resorts : 2 (102)
Volume :	x 10 ⁶ m ³	% Crown Land : 20

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	12	Alkalinity (mg/l)	32
Total Nitrogen (µg/l)	:	311	Colour	14

	<u>1983</u>	<u>1982</u> ¹	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u> ²	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.6	4.9				4.2					
Min.											
Secchi (m)	4.6	4.7				2.0					
Mean Chloro.											
(µg/l)	1.1	2.0				2.2					
Max. Chloro.											
(µg/l)	1.5	2.8				3.5					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 3	4.6	1.3			
July 10	5.5	1.5			
Aug. 7	5.3	-			
Aug. 14	5.6	1.2			
Aug. 21	6.4	0.7			
Aug. 28	5.5	0.9			
Sept. 11	<u>6.0</u>	<u>0.8</u>			
Mean	5.56	1.07			
Std. dev.	0.56	0.31			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bob's (Buck Bay) LAKE	Frontenac COUNTY	Bedford TOWNSHIP(S)
Watershed Area: 15	km ²	Shoreline : 10.5 km
Surface Area : 166	ha	Cottages : 87
Maximum Depth: 14	m	Resorts : 0
Volume :	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	21	Alkalinity (mg/l)	45
Total Nitrogen (µg/l)	:	438	Colour	15

	<u>1983</u>	<u>1982</u> ¹	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1972</u> ²
Mean											
Secchi (m)	5.0	4.8	5.4	3.7	3.6	3.4	3.8	4.8	3.7		3.9
Min.											
Secchi (m)	3.5	4.6	4.3	3.0	2.9	3.0	2.6	3.4	2.4		
Mean Chloro.											
(µg/l)	2.2	1.5	2.3	4.5	3.3	3.0	3.5	2.6	4.8		2.8
Max. Chloro.											
(µg/l)	4.7	1.8	2.9	9.6	6.4	4.4	5.2	6.3	7.5		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 4	5.6	1.4			
July 2	5.5	1.0			
July 10	5.5	1.4			
Aug. 12	4.9	2.3			
Sept. 4	-	2.4			
Oct. 9	<u>3.5</u>	<u>4.7</u>			
Mean	5.00	2.20			
Std. dev.	0.88	1.34			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bob's (East Basin) LAKE	Frontenac COUNTY	Bedford TOWNSHIP(S)
Watershed Area: 351.32 km ²	Shoreline : 66 km	
Surface Area : 927 ha	Cottages : 187	
Maximum Depth: 23 m	Resorts : 3 (33)	
Volume : 88.57 x 10 ⁶ m ³	% Crown Land : 2	

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	: 23	Alkalinity (mg/l)	54
Total Nitrogen (µg/l)	: 500	Colour	10

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1972</u> ²
Mean											
Secchi (m)	3.9	4.2	3.6						5.0		4.1
Min.											
Secchi (m)	2.9	2.9	2.2						3.6		
Mean Chloro.											
(µg/l)	1.6	3.1	2.7						2.7		3.7
Max. Chloro.											
(µg/l)	2.2	5.5	4.0						3.5		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 17	-	2.2			
May 25	3.2	2.0			
May 30	2.9	2.1			
June 8	4.9	1.0			
June 14	3.7	1.4			
July 4	4.4	1.0			
July 7	4.6	0.9			
July 12	3.7	2.1			
July 19	3.7	1.9			
July 25	3.8	2.1			
Aug. 2	3.0	1.5			
Aug. 10	4.0	2.0			
Aug. 15	3.7	1.0			
Aug. 23	4.1	1.1			
Aug. 30	4.1	-			
Sept. 13	<u>4.0</u>	<u>1.7</u>			
Mean	3.85	1.60			
Std. dev.	0.55	0.49			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bob's (Long Bay) LAKE	Frontenac COUNTY	Bedford TOWNSHIP(S)
Watershed Area:	km ²	Shoreline : km
Surface Area :	ha	Cottages :
Maximum Depth:	m	Resorts :
Volume :	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.2	2.6	3.9						5.3		
Min.											
Secchi (m)	1.5	2.3	2.4						4.6		
Mean Chloro.											
(µg/l)	2.8	2.9	3.1						2.4		
Max. Chloro.											
(µg/l)	8.0	4.4	4.7						3.7		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 14	3.4	1.7			
Aug. 21	2.9	0.9			
Sept. 5	1.7	1.4			
Sept. 18	2.4	2.3			
Sept. 26	1.7	3.2			
Oct. 10	1.7	2.3			
Nov. 19	<u>1.5</u>	<u>8.0</u>			
Mean	2.19	2.83			
Std. dev.	0.73	2.40			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Bob's (Mud Bay) LAKE	Frontenac COUNTY	Bedford TOWNSHIP(S)
Watershed Area: 6.11	km ²	Shoreline : km
Surface Area : 202	ha	Cottages : 160 + 15 houses
Maximum Depth: 7.3	m	Resorts : 4 (62)
Volume : 6.4	x 10 ⁶ m ³	% Crown Land : 20

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	19	Alkalinity (mg/l)	62
Total Nitrogen (µg/l)	:	421	Colour	5

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.8	3.2	2.9	3.5			3.8	3.5	4.0		
Min.											
Secchi (m)	2.1	2.0	1.8	2.1			3.2	2.9	2.4		
Mean Chloro.											
(µg/l)	2.7	4.0	4.0	4.9			2.5	4.0	5.1		
Max. Chloro.											
(µg/l)	4.3	7.4	9.1	9.6			4.2	7.6	11.0		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 6	4.1	1.3			
July 19	3.7	1.2			
Aug. 2	2.1	2.3			
Aug. 14	2.1	-			
Aug. 29	2.1	4.3			
Oct. 18	<u>2.6</u>	<u>4.3</u>			
Mean	2.78	2.68			
Std. dev.	0.90	1.54			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Brule (Wensley) LAKE	Frontenac COUNTY	Miller TOWNSHIP(S)
Watershed Area: 52.79	km ²	Shoreline : 26.6 km
Surface Area : 571	ha	Cottages : 85
Maximum Depth: 56.4	m	Resorts : 2 (3)
Volume : 126.65	x 10 ⁶ m ³	% Crown Land : 35

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	: 10	Alkalinity (mg/l)	44
Total Nitrogen (µg/l)	: 269	Colour	< 7

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	8.3	7.5	7.3	6.8	6.5			7.7			
Min.											
Secchi (m)	6.9	6.8	6.4	6.2	5.5			4.0			
Mean Chloro. (µg/l)	0.7	0.9	1.2	1.4	1.2			1.9			
Max. Chloro. (µg/l)	1.0	1.3	2.4	2.2	1.9			5.0			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
June 25	7.0	0.7	June 26	6.9	0.5
July 2	7.8	0.6	July 3	8.2	0.5
July 10	8.8	0.5	July 18	9.1	0.7
July 17	10.4	0.5	Aug. 29	<u>8.1</u>	<u>1.0</u>
Aug. 16	8.2	0.5			
Aug. 28	8.4	0.8	Mean	8.08	0.68
Sept. 5	<u>8.2</u>	<u>0.9</u>	Std. dev.	0.90	0.24
Mean	8.40	0.64			
Std. dev.	1.05	0.16			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Buck (North Bay)	Frontenac	Loughborough, Bedford, Storrington TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area: 8.34	km ²	Shoreline : 15 km
Surface Area : 276	ha	Cottages : 77 (1976)
Maximum Depth: 32	m	Resorts : 1 (25)
Volume : 27.78	x 10 ⁶ m ³	% Crown Land : 10

WATER CHEMISTRY 1979

Total Phosphorus (µg/l)	:	13	Alkalinity (mg/l)	35
Total Nitrogen (µg/l)	:	356	Colour	7

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u> ²	<u>1978</u>	<u>1977</u>	<u>1976</u> ¹	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.7	3.9	4.1	3.8	3.0	3.9	3.5	3.2	4.3		
Min.											
Secchi (m)	3.2	3.2	3.0	3.4	2.5	3.2	3.0	2.3	3.1		
Mean Chloro.											
(µg/l)	1.7	2.1	2.4	3.1	3.7	3.3	2.3	3.5	2.6		
Max. Chloro.											
(µg/l)	5.8	3.9	5.4	4.5	6.4	6.1	3.2	4.6	4.0		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
June 4	5.0	5.8	April 17	3.2	1.5
June 19	6.7	2.4	July 10	4.4	2.0
July 10	5.5	-	July 14	4.6	1.6
Aug. 14	4.3	1.9	July 22	4.6	1.1
Aug. 21	4.6	0.9	July 25	4.4	1.3
Aug. 28	4.9	1.4	July 31	4.6	0.7
Sept. 11	<u>3.7</u>	<u>0.5</u>	Aug. 4	5.2	0.8
			Aug. 13	5.2	2.1
Mean	4.96	2.15	Aug. 20	4.6	1.3
Std. dev.	0.96	1.91	Aug. 27	5.2	1.1
			Sept. 5	4.6	1.2
			Sept. 10	4.9	1.0
			Sept. 18	4.3	2.3
			Sept. 27	4.1	0.7
			Oct. 7	4.6	3.2
			Oct. 15	4.6	2.0
			Oct. 22	<u>4.7</u>	<u>1.9</u>
			Mean	4.58	1.52
			Std. dev.	0.47	0.66

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Burridge LAKE	Frontenac COUNTY	Bedford TOWNSHIP(S)
Watershed Area: 4.53	km ²	Shoreline : 6.9 km
Surface Area : 81	ha	Cottages : 47 (1974)
Maximum Depth: 16.2	m	Resorts : 0
Volume : 5.89	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1983

Total Phosphorus (µg/l)	:	25	Alkalinity (mg/l)	108
Total Nitrogen (µg/l)	:	484	Colour	21

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.9	4.7	4.4	4.5							
Min.											
Secchi (m)	3.2	4.0	3.0	3.0							
Mean Chloro.											
(µg/l)	1.3	0.7	1.7	2.4							
Max. Chloro.											
(µg/l)	2.0	1.2	3.6	4.5							

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 14	6.7	1.6			
Aug. 21	4.7	1.0			
Aug. 27	6.2	1.9			
Sept. 5	4.9	-			
Sept. 11	4.1	0.6			
Sept. 18	3.2	1.5			
Sept. 25	3.5	1.5			
Oct. 7	5.8	0.6			
Oct. 9	5.2	0.9			
Oct. 14	-	1.3			
Oct. 26	<u>4.9</u>	<u>2.0</u>			
Mean	4.92	1.29			
Std. dev.	1.12	0.50			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Canoe LAKE	Frontenac COUNTY	Bedford TOWNSHIP(S)
Watershed Area: 24	km ²	Shoreline : 20 km
Surface Area : 291	ha	Cottages : 25
Maximum Depth: 47	m	Resorts : 2(63)
Volume : 66.7	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	71.5
Total Nitrogen (µg/l)	:	285	Colour	5

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	7.9				6.0				8.2		
Min.											
Secchi (m)	7.3				4.2				5.8		
Mean Chloro.											
(µg/l)	1.0				1.4				1.8		
Max. Chloro.											
(µg/l)	1.5				4.3				2.6		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 1	7.6	1.3			
Aug. 8	8.5	1.5			
Aug. 14	7.9	0.9			
Aug. 21	8.4	0.6			
Aug. 28	7.9	0.8			
Sept. 5	<u>7.3</u>	<u>---</u>			
Mean	7.93	1.02			
Std. dev.	0.46	0.37			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Charleston: Big Water

Leeds

Rear of Leeds &
Lansdowne,
Front/Rear of
Yonge & Escott
TOWNSHIP(S)

LAKE	COUNTY		
Watershed Area: 300	km ²	Shoreline :	152 km
Surface Area : 2517	ha	Cottages :	627 + 63 houses
Maximum Depth: 91	m	Resorts :	3(40)+(227) Prov. Park
Volume : 437	x 10 ⁶ m ³	% Crown Land :	20

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	15	Alkalinity (mg/l)	104
Total Nitrogen (µg/l)	:	352	Colour	14

	<u>1983</u>	<u>1982</u> ²	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ¹	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.5	3.6	3.8	4.1	3.5	3.7	4.0	3.9	4.4		
Min.											
Secchi (m)	3.4	2.3	3.0	2.7	2.4	3.0	2.4	3.7	3.1		
Mean Chloro.											
(µg/l)	2.2	3.3	3.9	2.6	2.7	2.2	2.3	4.0	2.9		
Max. Chloro.											
(µg/l)	3.7	6.7	5.9	6.7	4.0	3.2	2.9	7.9	3.8		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 20	4.9	3.7			
June 27	4.0	1.5			
July 4	4.9	1.5			
July 11	4.9	2.9			
July 18	5.2	3.1			
July 25	4.6	1.5			
Aug. 2	3.4	2.4			
Aug. 8	-	-			
Aug. 15	3.7	2.7			
Aug. 22	4.0	0.8			
Aug. 29	<u>5.8</u>	<u>1.8</u>			
Mean	4.54	2.19			
Std. dev.	0.75	0.91			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Charleston:	Deep Water	Leeds		Rear of Leeds & Lansdowne, Front/Rear of Yonge & Escott TOWNSHIP(S)
LAKE		COUNTY		
Watershed Area:	300	km ²	Shoreline	: 152 km
Surface Area :	2517	ha	Cottages	: 627 + 63 houses
Maximum Depth:	91	m	Resorts	: 3(40)+(227) Prov. Park
Volume :	437	x 10 ⁶ m ³	% Crown Land :	20

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	15	Alkalinity (mg/l)	103
Total Nitrogen (µg/l)	:	340	Colour	14

	<u>1983</u>	<u>1982</u> ²	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.4	3.6	3.6	4.3	3.7	3.7	4.0	3.8	4.4		
Min.											
Secchi (m)	3.0	2.5	3.0	3.2	1.8	3.0	2.6	3.2	3.0		
Mean Chloro.											
(µg/l)	2.1	2.8	4.2	2.4	2.4	2.3	2.2	3.8	3.0		
Max. Chloro.											
(µg/l)	3.7	4.6	6.3	4.9	4.0	3.2	3.1	6.7	4.1		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 20	4.3	3.7			
June 27	4.3	1.9			
July 4	4.6	1.0			
July 11	3.7	2.7			
July 18	5.5	3.6			
July 25	4.3	2.6			
Aug. 2	3.0	1.7			
Aug. 8	-	-			
Aug. 15	3.4	-			
Aug. 22	4.3	0.5			
Aug. 29	<u>6.1</u>	<u>1.6</u>			
Mean	4.35	2.14			
Std. dev.	0.91	1.10			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Charleston: Goose Island Leeds

Rear of Leeds &
Lansdowne,
Front/Rear of
Yonge & Escott
TOWNSHIP(S)

LAKE	COUNTY		
Watershed Area: 300	km ²	Shoreline	: 152.2 km
Surface Area : 2517	ha	Cottages	: 627 + 63 houses
Maximum Depth: 91.1	m	Resorts	: 3(40)+(227) Prov. Park
Volume : 437.0	x 10 ⁶ m ³	% Crown Land	: 20

WATER CHEMISTRY 19

Total Phosphorus (µg/l) : Alkalinity (mg/l)
Total Nitrogen (µg/l) : Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.4	4.1	3.6	4.2	4.2	3.9					
Min.											
Secchi (m)	2.0	3.0	3.2	3.2	3.7	3.5					
Mean Chloro. (µg/l)	1.7	2.3	3.3	2.3	2.1	1.9					
Max. Chloro. (µg/l)	3.2	3.2	4.0	4.7	2.9	3.3					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 11	5.2	1.9			
July 18	4.6	2.3			
July 24	3.4	3.2			
Aug. 8	2.0	1.6			
Aug. 15	3.0	1.4			
Aug. 29	6.4	1.1			
Sept. 12	4.9	1.5			
Sept. 19	5.9	0.6			
Mean	4.43	1.70			
Std. dev.	1.51	0.79			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Charleston: Webster Bay

Leeds

Rear of Leeds &
Lansdowne,
Front/Rear of
Yonge & Escott
TOWNSHIP(S)

LAKE	COUNTY		
Watershed Area:	300 km ²	Shoreline	: 152.2 km
Surface Area :	2517 ha	Cottages	: 627 + 63 houses
Maximum Depth:	91.1 m	Resorts	: 3(40)+(227) Prov. Park
Volume :	437.0 x 10 ⁶ m ³	% Crown Land:	20

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.5	4.4	3.7	4.4	4.4	3.9	3.6				
Min.											
Secchi (m)	1.7	3.2	3.2	3.4	3.7	3.4	2.9				
Mean Chloro.											
(µg/l)	1.5	2.5	3.5	2.6	2.1	2.2	2.2				
Max. Chloro.											
(µg/l)	2.6	3.5	4.4	5.7	2.9	3.1	4.4				

- ¹ based on less than 6 measurements
² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 11	5.0	1.3			
July 18	4.9	2.6			
July 24	3.8	1.6			
Aug. 8	1.7	-			
Aug. 15	3.0	1.9			
Aug. 29	6.4	1.3			
Sept. 12	5.2	1.5			
Sept. 19	<u>5.8</u>	<u>0.6</u>			
Mean	4.48	1.54			
Std. dev.	1.55	0.61			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Charleston (Western Water)	Leeds	Rear of Leeds & Lansdowne TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area: 300	km ²	Shoreline : 152.2 km
Surface Area : 2517	ha	Cottages : 627 + 63 houses
Maximum Depth: 91.1	m	Resorts : 3(40)+(227) Prov. Park
Volume : 437.0	x 10 ⁶ m ³	% Crown Land : 20

WATER CHEMISTRY 19

Total Phosphorus (µg/l) : Alkalinity (mg/l)
Total Nitrogen (µg/l) : Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.8	4.5	3.8	4.3	4.5	4.0					
Min.											
Secchi (m)	1.7	3.0	3.2	3.5	4.0	3.5					
Mean Chloro. (µg/l)	1.9	2.6	3.7	2.8	3.1	2.0					
Max. Chloro. (µg/l)	3.2	4.3	4.5	6.0	6.8	2.7					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 11	6.1	1.5			
July 18	4.9	2.3			
July 24	3.7	3.2			
Aug. 8	1.7	2.3			
Aug. 15	3.0	2.0			
Aug. 29	6.4	-			
Sept. 12	6.1	1.5			
Sept. 19	<u>6.4</u>	<u>0.5</u>			
Mean	4.79	1.90			
Std. dev.	1.80	0.85			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Chippego LAKE	Frontenac COUNTY	Hinchinbrooke TOWNSHIP(S)
Watershed Area: 11.9	km ²	Shoreline : 7.9 km
Surface Area : 103	ha	Cottages : 57 (1983)
Maximum Depth : 18.3	m	Resorts : 1
Volume : 6.85	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1983

Total Phosphorus (µg/l)	:	19	Alkalinity (mg/l)	24
Total Nitrogen (µg/l)	:	486	Colour	29

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.4	3.1	3.2	3.1	3.1						
Min.											
Secchi (m)	2.7	2.1	2.6	2.4	2.5						
Mean Chloro.											
(µg/l)	2.8	2.7	3.6	5.2	4.0						
Max. Chloro.											
(µg/l)	4.4	5.4	10.0	9.0	6.5						

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 5	2.7	4.4			
June 12	2.7	2.3			
June 20	3.2	2.8			
June 27	2.9	3.3			
July 18	3.7	4.2			
July 22	3.8	3.9			
July 27	3.7	2.2			
Aug. 5	3.5	2.0			
Aug. 16	3.8	2.9			
Aug. 20	3.7	-			
Aug. 25	4.0	0.9			
Sept. 1	3.8	0.9			
Sept. 5	3.7	1.1			
Sept. 18	3.2	2.8			
Sept. 29	3.2	3.6			
Oct. 14	3.2	3.2			
Oct. 17	3.2	3.9			
Oct. 31	<u>2.9</u>	<u>3.4</u>			
Mean	3.38	2.81			
Std. dev.	0.41	1.11			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Collins LAKE	Frontenac COUNTY	Storrington TOWNSHIP(S)
Watershed Area: 32	km ²	Shoreline : 16.8 km
Surface Area : 326	ha	Cottages : 65
Maximum Depth: 10.1	m	Resorts : 1 (4)
Volume : 13.64	x 10 ⁶ m ³	% Crown Land : 2

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	19	Alkalinity (mg/l)	105
Total Nitrogen (µg/l)	:	620	Colour	14

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.4			3.1		3.7					
Min.											
Secchi (m)	1.8			2.3		2.0					
Mean Chloro.											
(µg/l)	7.6			4.4		3.5					
Max. Chloro.											
(µg/l)	19.4			9.0		6.7					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 3	3.2	8.1			
July 12	2.1	2.3			
July 21	1.8	19.4			
July 30	2.4	6.6			
Aug. 17	<u>2.7</u>	<u>1.8</u>			
Mean	2.44	7.64			
Std. dev.	0.54	7.11			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Consecon LAKE	Prince Edward COUNTY	Hillier, Ameliasburg TOWNSHIP(S)
Watershed Area: 187	km ²	Shoreline : 18.4 km
Surface Area : 599	ha	Cottages : 89+88 houses
Maximum Depth: 16.8	m	Resorts : 10(146)
Volume : 42.0	x 10 ⁶ m ³	% Crown Land : 1

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	15	Alkalinity (mg/l)	141
Total Nitrogen (µg/l)	:	590	Colour	32

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.5			2.6							
Min.											
Secchi (m)	1.7			1.5							
Mean Chloro.											
(µg/l)	3.9			3.4							
Max. Chloro.											
(µg/l)	5.9			8.0							

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 10	3.4	1.6			
July 17	2.6	2.5			
July 24	1.7	4.4			
Aug. 1	1.7	1.9			
Aug. 7	2.6	-			
Aug. 15	3.5	5.7			
Aug. 28	2.3	3.2			
Sept. 25	2.7	5.9			
Oct. 2	<u>2.3</u>	<u>5.6</u>			
Mean	2.53	3.85			
Std. dev.	0.63	1.78			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Cranesnest LAKE	Frontenac COUNTY	Storrington TOWNSHIP(S)
Watershed Area:	km ²	Shoreline : km
Surface Area :	ha	Cottages :
Maximum Depth:	m	Resorts :
Volume :	x 10 ⁶ m ³	% Crown Land: 0

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

1983 1982 1981 1980 1979 1978 1977 1976 1975 1974 1973

Mean

Secchi (m) 1.7

Min.

Secchi (m) 1.5

Mean Chloro.

(µg/l) 2.9

Max. Chloro.

(µg/l) 4.3

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 8	2.0	2.7			
Aug. 12	1.8	2.9			
Aug. 21	1.8	4.1			
Aug. 28	1.8	3.3			
Sept. 5	1.7	2.6			
Sept. 11	1.7	1.4			
Sept. 18	1.5	4.3			
Sept. 25	<u>1.5</u>	<u>2.1</u>			
Mean	1.73	2.93			
Std. dev.	0.17	0.97			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Crosby LAKE	Leeds COUNTY	North Crosby TOWNSHIP(S)
Watershed Area: 26.6	km ²	Shoreline : 17.7 km
Surface Area : 263	ha	Cottages : 158 (1974)
Maximum Depth: 19	m	Resorts : 0
Volume : 21.68	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	18	Alkalinity (mg/l)	54
Total Nitrogen (µg/l)	:	434	Colour	30

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u> ¹	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u> ²	<u>1973</u>
Mean											
Secchi (m)	4.0	4.2	4.4	4.0	3.4				4.1	3.7	
Min.											
Secchi (m)	3.0	3.6	3.6	3.2	3.0				2.3		
Mean Chloro.											
(µg/l)	1.5	2.1	2.5	2.6	4.7				3.6	3.3	
Max. Chloro.											
(µg/l)	2.3	5.4	9.3	5.2	6.9				5.2		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 15	3.0	1.7			
May 23	3.4	1.8			
June 5	4.3	1.0			
June 26	4.3	1.4			
July 10	4.9	2.3			
Aug. 1	4.3	1.0			
Aug. 14	3.0	2.3			
Aug. 21	3.0	1.3			
Sept. 5	<u>5.5</u>	<u>0.6</u>			
Mean	3.97	1.49			
Std. dev.	0.91	0.59			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Crowe LAKE	Hastings COUNTY	Marmora TOWNSHIP(S)
Watershed Area: 1444	km ²	Shoreline : 21 km
Surface Area : 876	ha	Cottages : 328
Maximum Depth: 15.8	m	Resorts : 6(548)
Volume : 49.38	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	10	Alkalinity (mg/l)	58
Total Nitrogen (µg/l)	:	398	Colour	26

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ¹	<u>1976</u>	<u>1975</u> ¹	<u>1974</u> ¹	<u>1972</u> ²
Mean											
Secchi (m)	2.9	3.2	2.8	3.0	2.4	2.4	3.9	4.7	4.7	4.7	3.7
Min.											
Secchi (m)	0.9	2.9	1.8	1.9	2.1	2.0	1.5	3.7	4.6	3.3	3.0
Mean Chloro.											
(µg/l)	1.6	1.6	2.0	2.2	3.2	2.1	3.0	3.3	2.7	1.2	1.7
Max. Chloro.											
(µg/l)	2.5	2.2	3.3	6.1	5.7	3.1	5.8	4.1	3.8	1.7	4.1

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 3	2.7	1.3			
July 10	3.0	1.7			
July 17	3.0	2.5			
July 24	3.0	2.4			
Aug. 2	3.0	1.6			
Aug. 7	3.0	1.6			
Aug. 14	3.0	1.6			
Aug. 21	3.4	1.2			
Aug. 22	0.9	1.7			
Sept. 4	3.4	1.0			
Sept. 11	3.4	1.0			
Sept. 25	<u>3.5</u>	<u>---</u>			
Mean	2.94	1.60			
Std. dev.	0.69	0.49			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Dalhousie LAKE	Lanark COUNTY	Dalhousie TOWNSHIP(S)
Watershed Area: 1288	km ²	Shoreline : 13.5 km
Surface Area : 591	ha	Cottages : 184 + 8 houses
Maximum Depth: 13.41	m	Resorts : 4 (73)
Volume : 43.22	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	9	Alkalinity (mg/l)	44.3
Total Nitrogen (µg/l)	:	340	Colour	18

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.8	4.6	5.0	4.4	3.4	4.6	4.1	3.9	3.6		
Min.											
Secchi (m)	4.6	4.0	3.7	3.0	2.2	2.3	3.4	1.7	2.7		
Mean Chloro.											
(µg/l)	0.8	1.8	1.4	2.4	2.0	1.4	1.6	2.3	3.4		
Max. Chloro.											
(µg/l)	0.8	2.9	1.8	7.3	6.2	3.9	1.9	4.8	6.2		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Purdon's Bay			#2		
July 3	<u>5.5</u>	<u>0.8</u>	July 19	4.6	
			July 26	4.6	
Mean	5.50	0.80	Aug. 1	4.6	
			Aug. 8	<u>4.6</u>	
			Mean	4.60	
			Std. dev.	0	

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Davern LAKE	Lanark COUNTY	South Sherbrooke TOWNSHIP(S)
Watershed Area: 2.4	km ²	Shoreline : 4.1 km
Surface Area : 52	ha	Cottages : 17
Maximum Depth: 25.1	m	Resorts : 1 (15)
Volume : 6.01	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1981

Total Phosphorus (µg/l)	:	7	Alkalinity (mg/l)	110
Total Nitrogen (µg/l)	:	431	Colour	11

	<u>1983</u>	<u>1982</u>	<u>1981</u> ²	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.3	5.0	4.7	5.1							
Min.											
Secchi (m)	4.3	3.7	3.2	3.5							
Mean Chloro.											
(µg/l)	1.3	1.1	1.9	1.1							
Max. Chloro.											
(µg/l)	2.6	1.8	3.1	4.5							

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 19	5.0	2.6			
June 26	6.6	1.3			
July 3	5.8	1.4			
July 10	5.5	1.2			
July 24	4.9	1.3			
Aug. 1	4.9	1.0			
Aug. 7	6.4	1.3			
Aug. 21	5.8	1.0			
Sept. 5	4.3	-			
Sept. 11	4.3	0.9			
Oct. 2	4.6	1.1			
Oct. 10	<u>5.2</u>	<u>1.1</u>			
Mean	5.28	1.29			
Std. dev.	0.76	0.46			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Dempseys (Virgin)	Renfrew	Bagot & Blythfield TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area: 13.8	km ²	Shoreline : km
Surface Area : 46	ha	Cottages :
Maximum Depth:	m	Resorts :
Volume :	$\times 10^6$ m ³	% Crown Land : 35

WATER CHEMISTRY 19

Total Phosphorus ($\mu\text{g/l}$)	:	Alkalinity (mg/l)
Total Nitrogen ($\mu\text{g/l}$)	:	Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.7	5.5		4.2							
Min.											
Secchi (m)	4.3	4.6		3.2							
Mean Chloro.											
($\mu\text{g/l}$)	1.3	1.2		2.4							
Max. Chloro.											
($\mu\text{g/l}$)	1.8	2.4		3.0							

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. ($\mu\text{g/l}$)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. ($\mu\text{g/l}$)</u>
May 1	4.3	0.9			
June 5	5.3	1.0			
June 12	6.5	1.1			
June 19	6.1	1.3			
July 3	5.9	1.2			
July 10	5.6	1.4			
Aug. 7	6.1	1.7			
Aug. 21	4.9	1.3			
Aug. 28	6.6	1.8			
Sept. 11	5.8	-			
Oct. 2	<u>5.5</u>	<u>1.3</u>			
Mean	5.69	1.30			
Std. dev.	0.68	0.28			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Desert		Frontenac		Bedford & Loughborough TOWNSHIP(S)
LAKE		COUNTY		
Watershed Area:	97	km ²	Shoreline	: 28 km
Surface Area :	382	ha	Cottages	: 71 (1976)
Maximum Depth:	68	m	Resorts	: 3 (95)
Volume :	85.5	x 10 ⁶ m ³	% Crown Land:	0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	18	Alkalinity (mg/l)	76
Total Nitrogen (µg/l)	:	339	Colour	5

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.2	4.9	4.6	4.6	4.5	5.5	4.9		5.9		
Min.											
Secchi (m)	3.2	3.5	3.7	3.5	3.9	5.0	3.8		3.4		
Mean Chloro.											
(µg/l)	1.4	1.3	2.3	2.3	2.0	1.7	1.7		2.6		
Max. Chloro.											
(µg/l)	2.4	3.6	8.0	4.2	2.4	2.7	2.4		3.5		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Stn. 1			South Bay		
May 25	3.2	1.6	June 20	5.6	0.5
June 5	3.7	1.6	June 26	4.3	0.9
June 16	4.3	1.5	July 3	5.6	2.4
July 10	5.5	1.4	July 12	5.5	2.3
July 20	6.1	1.5	July 17	6.2	1.8
Aug. 14	4.9	1.4	July 24	5.0	1.5
Aug. 26	4.9	0.7	Aug. 1	5.8	1.0
Sept. 12	5.2	-	Aug. 5	5.2	1.3
Sept. 24	4.6	1.1	Aug. 8	5.5	2.3
Oct. 10	<u>5.2</u>	<u>1.1</u>	Aug. 14	5.5	-
			Aug. 21	5.6	-
Mean	4.76	1.32	Aug. 28	5.3	-
Std. dev.	0.85	0.30	Sept. 5	6.1	1.6
			Sept. 11	5.3	1.3
			Sept. 20	5.5	1.0
			Sept. 25	5.0	0.8
			Oct. 2	4.7	1.3
			Oct. 11	<u>5.5</u>	<u>1.1</u>
			Mean	5.40	1.41
			Std. dev.	0.46	0.58

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Devil LAKE	Frontenac COUNTY	Bedford TOWNSHIP(S)
Watershed Area: 174	km ²	Shoreline : 36.2 km
Surface Area : 1061	ha	Cottages : 220 + 3 houses
Maximum Depth: 45	m	Resorts : 4 (51)
Volume : 152.39	x 10 ⁶ m ³	% Crown Land : 20

WATER CHEMISTRY 1981

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	70.5
Total Nitrogen (µg/l)	:	283	Colour	11

	<u>1983</u>	<u>1982</u>	<u>1981</u> ²	<u>1980</u> ¹	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u> ²	<u>1973</u>
Mean											
Secchi (m)	5.7	5.7	5.3	4.6	4.1	5.3	4.8	5.2	5.3	5.6	
Min.											
Secchi (m)	5.2	5.0	3.8	4.6	3.7	4.7	4.1	4.5	5.2	4.9	
Mean Chloro.											
(µg/l)	1.5	1.8	2.3	1.8	1.7	1.9	1.7	1.5	2.2	1.6	
Max. Chloro.											
(µg/l)	2.3	2.3	4.2	1.8	3.8	3.4	3.0	2.3	4.7	2.4	

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Buce Bay			Hays Bay		
June 12	5.3	1.6	June 12	5.2	1.4
June 16	6.1	1.6	June 16	-	1.6
July 3	6.1	1.3	July 3	6.0	1.6
July 17	6.1	2.3	July 17	6.0	1.5
Aug. 7	5.8	1.5	Aug. 7	5.5	1.4
Aug. 21	5.6	1.1	Aug. 21	5.5	1.0
Sept. 5	<u>5.5</u>	<u>1.4</u>	Sept. 5	<u>5.3</u>	<u>1.4</u>
Mean	5.79	1.54	Mean	5.58	1.41
Std. dev.	0.33	0.38	Std. dev.	0.34	0.20

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Diamond LAKE	Hastings COUNTY	Herschel TOWNSHIP(S)
Watershed Area: 32.7	km ²	Shoreline : 10 km
Surface Area : 150	ha	Cottages : 65 + 16 houses
Maximum Depth: 23.8	m	Resorts : 1 (6)
Volume : 12.48	x 10 ⁶ m ³	% Crown Land : 60

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	10	Alkalinity (mg/l)	14.5
Total Nitrogen (µg/l)	:	248	Colour	10

	<u>1983</u> ¹	<u>1982</u> ¹	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	6.0	5.2	5.3	4.3	4.9	5.1	5.4				
Min.											
Secchi (m)	5.2	4.3	4.3	3.4	4.6	3.7	4.5				
Mean Chloro.											
(µg/l)	1.0	1.2	1.0	1.3	1.3	1.0	1.1				
Max. Chloro.											
(µg/l)	1.4	1.3	1.2	1.8	1.4	1.2	2.5				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 22	5.8	0.6			
July 8	5.2	0.9			
July 30	5.5	1.4			
Aug. 29	6.7	0.9			
Oct. 1	<u>6.7</u>	<u>1.2</u>			
Mean	5.98	1.00			
Std. dev.	0.69	0.31			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Dickey (North Basin) LAKE	Hastings COUNTY	Lake TOWNSHIP(S)
Watershed Area: 49	km ²	Shoreline : km
Surface Area : 54	ha	Cottages : 73
Maximum Depth: 12.2	m	Resorts : 0
Volume :	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	12	Alkalinity (mg/l)	59
Total Nitrogen (µg/l)	:	389	Colour	24

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1976</u> ²	<u>1975</u>	<u>1973</u>	<u>1972</u>	<u>1971</u>
Mean											
Secchi (m)	4.2	4.9	5.3	4.5			5.0		4.5	4.4	4.3
Min.											
Secchi (m)	3.3	3.4	3.9	3.5			4.2		3.3	3.1	3.5
Mean Chloro.											
(µg/l)	1.1	1.2	1.3	1.3			1.1		1.3	1.4	1.2
Max. Chloro.											
(µg/l)	2.2	1.6	2.6	1.8			1.8		2.4	2.7	2.5

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 15	3.7	0.8			
May 23	3.5	1.5			
June 12	4.1	0.5			
June 20	4.1	1.5			
July 3	3.7	0.7			
July 10	3.9	1.7			
July 17	3.3	1.1			
July 24	4.1	0.9			
Aug. 8	4.1	1.5			
Aug. 15	4.8	2.2			
Aug. 22	4.7	1.2			
Aug. 26	4.4	0.7			
Sept. 5	4.7	0.7			
Oct. 10	<u>5.3</u>	<u>0.9</u>			
Mean	4.17	1.14			
Std. dev.	0.56	0.48			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Dickey (South Basin) LAKE	Hastings COUNTY	Lake TOWNSHIP(S)
Watershed Area: 5.46	km ²	Shoreline : km
Surface Area : 149	ha	Cottages : 24
Maximum Depth: 46.3	m	Resorts : 0
Volume :	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	:	8	Alkalinity (mg/l)	60
Total Nitrogen (µg/l)	:	356	Colour	10

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1972</u> ²
Mean											
Secchi (m)	4.5		5.4	5.1				5.2			4.5
Min.											
Secchi (m)	3.8		4.2	3.2				4.4			3.5
Mean Chloro.											
(µg/l)	0.8		1.2	1.3				1.0			1.3
Max. Chloro.											
(µg/l)	1.6		1.8	1.6				1.8			2.4

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
May 15	3.8	1.0	June 24	4.3	1.0
May 23	4.0	0.8	July 14	4.5	0.8
June 12	5.0	0.4	July 27	4.5	1.0
June 20	5.6	0.6	Aug. 26	4.0	1.0
July 3	4.1	0.6	Sept. 26	5.0	0.8
July 10	4.3	0.9	Oct. 24	4.0	1.0
July 17	4.3	0.8	Nov. 24	<u>5.4</u>	<u>0.5</u>
July 24	4.3	-			
Aug. 8	4.5	0.8	Mean	4.53	0.87
Aug. 15	4.9	1.6	Std. dev.	0.52	0.19
Aug. 22	4.4	1.0			
Aug. 26	4.1	-			
Sept. 5	5.0	0.6			
Oct. 10	<u>5.5</u>	<u>1.0</u>			
Mean	4.56	0.84			
Std. dev.	0.56	0.31			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Dog (North Basin) LAKE	Frontenac COUNTY	Storrington TOWNSHIP(S)
Watershed Area: 62	km ²	Shoreline : 23 km
Surface Area : 471	ha	Cottages : 105
Maximum Depth: 49.7	m	Resorts : 2(78)
Volume : 39.90	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	33	Alkalinity (mg/l)	55
Total Nitrogen (µg/l)	:	643	Colour	10

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.0				1.9				2.8		
Min.											
Secchi (m)	0.7				1.0				1.5		
Mean Chloro.											
(µg/l)	10.3				9.4				8.7		
Max. Chloro.											
(µg/l)	25.2				17.2				25.0		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
North Basin			Long Reach		
July 10	3.7	2.9	Aug. 21	1.1	13.3
July 17	3.8	4.3	Aug. 28	0.9	16.5
July 24	2.7	3.7	Sept. 4	1.1	14.6
Aug. 1	2.9	6.2	Sept. 10	0.7	22.2
Aug. 14	2.3	8.7	Sept. 18	-	25.2
Aug. 21	1.7	3.8	Sept. 28	<u>0.8</u>	<u>21.0</u>
Aug. 28	1.7	7.4			
Sept. 5	1.8	5.5	Mean	0.92	18.80
Sept. 11	2.1	6.8	Std. dev.	0.18	4.70
Sept. 18	2.3	6.0			
Oct. 2	<u>1.7</u>	<u>7.5</u>			
Mean	2.43	5.71			
Std. dev.	0.77	1.85			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Draper LAKE		Frontenac COUNTY		Loughborough TOWNSHIP(S)
Watershed Area:	4.89	km ²	Shoreline	: 5.6 km
Surface Area :	93	ha	Cottages	: 23
Maximum Depth:	29.6	m	Resorts	: 0
Volume :	12.63	x 10 ⁶ m ³	% Crown Land :	0

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	126
Total Nitrogen (µg/l)	:	411	Colour	5

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.1					4.6	5.0	4.9			
Min.											
Secchi (m)	4.9					4.0	4.1	2.6			
Mean Chloro.											
(µg/l)	5.8					1.5	1.5	2.2			
Max. Chloro.											
(µg/l)	9.0					2.0	3.4	2.7			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 5	5.5	7.6			
Aug. 21	4.9	9.0			
Sept. 5	<u>4.9</u>	<u>0.9</u>			
Mean	5.10	5.83			
Std. dev.	0.35	4.33			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Dropledge LAKE	Renfrew COUNTY	Raglan TOWNSHIP(S)
Watershed Area: 0.22	km ²	Shoreline : 1.9 km
Surface Area : 4.6	ha	Cottages : 0
Maximum Depth: 11.6	m	Resorts : 0
Volume : 0.74	x 10 ⁶ m ³	% Crown Land : 100

WATER CHEMISTRY 19

Total Phosphorus (µg/l) : Alkalinity (mg/l)
Total Nitrogen (µg/l) : Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ¹	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m) 5.0								5.3			
Min.											
Secchi (m) 4.0								4.7			
Mean Chloro.											
(µg/l) 6.0								1.4			
Max. Chloro.											
(µg/l) 23.4								1.7			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 27	4.5	-			
July 15	6.5	2.0			
July 28	4.5	3.9			
Aug. 26	5.5	23.4			
Sept. 15	5.0	0.4			
Sept. 27	5.0	2.7			
Oct. 31	<u>4.0</u>	<u>3.4</u>			
Mean	5.00	5.97			
Std. dev.	0.82	8.63			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Eagle	Frontenac	Olden, Hinchinbrooke
LAKE	COUNTY	TOWNSHIP(S)
Watershed Area: 40.1	km ²	Shoreline : 41.4 km
Surface Area : 665	ha	Cottages : 135 + 1 house
Maximum Depth: 31.1	m	Resorts : 2
Volume : 67.2	x 10 ⁶ m ³	% Crown Land : 5

WATER CHEMISTRY 1981

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	46
Total Nitrogen (µg/l)	:	368	Colour	9

	<u>1983</u>	<u>1982</u>	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.3	4.9	4.5	4.8	4.7		4.3		5.1		
Min.											
Secchi (m)	3.8	4.1	3.2	3.9	3.8		3.7		2.8		
Mean Chloro.											
(µg/l)	1.7	1.8	2.0	2.9	2.2		1.3		2.4		
Max. Chloro.											
(µg/l)	2.6	3.0	3.1	4.2	3.3		1.7		3.5		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
June 13	5.8	1.6	May 29	4.7	1.9
June 20	6.7	2.2	June 6	4.7	1.7
July 15	5.3	2.0	June 12	5.3	1.2
July 24	4.9	2.3	June 19	5.9	0.6
Aug. 6	5.9	1.1	July 3	6.0	1.6
Aug. 11	-	-	July 10	5.3	1.4
Sept. 18	3.8	1.5	July 17	6.2	2.6
Sept. 26	3.8	-	July 25	5.9	2.2
Oct. 10	<u>4.1</u>	<u>2.1</u>	Aug. 7	5.6	1.9
			Aug. 14	5.3	1.2
Mean	5.04	1.83	Aug. 21	5.3	1.2
Std. dev.	1.08	0.44	Aug. 28	5.6	2.0
			Sept. 11	5.6	1.7
			Sept. 24	4.7	0.9
			Oct. 10	<u>4.7</u>	<u>2.4</u>
			Mean	5.39	1.63
			Std. dev.	0.51	0.56

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Elbow LAKE	Frontenac COUNTY	Hinchinbrooke TOWNSHIP(S)
Watershed Area: 19.2	km ²	Shoreline : 13.32 km
Surface Area : 126	ha	Cottages : 46
Maximum Depth: 9.8	m	Resorts : 1 (5)
Volume : 6.56	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	17	Alkalinity (mg/l)	25
Total Nitrogen (µg/l)	:	542	Colour	52

	<u>1983</u>	<u>1982</u> ²	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.3	2.4									
Min.											
Secchi (m)	3.0	2.1									
Mean Chloro.											
(µg/l)	2.2	2.6									
Max. Chloro.											
(µg/l)	3.0	5.0									

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 12	3.1	1.7			
July 24	3.2	2.8			
Aug. 1	3.0	3.0			
Aug. 7	3.4	2.2			
Aug. 14	3.4	2.9			
Sept. 5	3.7	1.7			
Sept. 19	3.5	1.7			
Sept. 25	<u>3.4</u>	<u>1.7</u>			
Mean	3.34	2.21			
Std. dev.	0.23	0.60			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Eloida LAKE	Leeds COUNTY	Rear of Yonge & Escott TOWNSHIP(S)
Watershed Area: 6.38	km ²	Shoreline : 5.79 km
Surface Area : 166	ha	Cottages : 0 + 8 houses
Maximum Depth: 1.52	m	Resorts : 0
Volume : 0.5	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	13	Alkalinity (mg/l)	112
Total Nitrogen (µg/l)	:	552	Colour	9

	<u>1983</u>	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.0	2.2	1.9								
Min.											
Secchi (m)	1.8	1.0	1.5								
Mean Chloro.											
(µg/l)	5.7	2.6	2.1								
Max. Chloro.											
(µg/l)	22.8	7.6	2.3								

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 29	2.0	2.4			
July 14	2.4	3.9			
July 28	2.1	0.7			
Aug. 11	1.8	3.2			
Aug. 25	1.8	22.8			
Sept. 15	<u>2.1</u>	<u>1.3</u>			
Mean	2.03	5.72			
Std. dev.	0.23	8.45			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Faraday (Trout) LAKE	Hastings COUNTY	Faraday TOWNSHIP(S)
Watershed Area: 19.20	km ²	Shoreline : 7.57 km
Surface Area : 113	ha	Cottages : 89
Maximum Depth: 24.4	m	Resorts : 1 (15)
Volume : 10.19	x 10 ⁶ m ³	% Crown Land : 35

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	7	Alkalinity (mg/l)	40
Total Nitrogen (µg/l)	:	257	Colour	7

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u> ²	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	6.4	5.5				6.1					
Min.											
Secchi (m)	6.1	4.1				4.8					
Mean Chloro.											
(µg/l)	1.3	1.2				1.4					
Max. Chloro.											
(µg/l)	1.3	1.6				1.8					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Station A			Station B		
Aug. 28	<u>6.7</u>	<u>1.3</u>	Aug. 28	<u>6.1</u>	<u>1.2</u>
Mean	6.7	1.3	Mean	6.1	1.2

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Farren (Farrell) LAKE	Lanark COUNTY	South Sherbrooke TOWNSHIP(S)
Watershed Area: 12.25	km ²	Shoreline : 9.5 km
Surface Area : 173	ha	Cottages : 101 (1974)
Maximum Depth: 21.3	m	Resorts : 1 (6)
Volume : 14.32	$\times 10^6$ m ³	% Crown Land : 0

WATER CHEMISTRY 1980

Total Phosphorus ($\mu\text{g/l}$)	:	8	Alkalinity (mg/l)	87
Total Nitrogen ($\mu\text{g/l}$)	:	360	Colour	5

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.9	5.0	5.7	5.2					4.7		
Min.											
Secchi (m)	4.1	4.3	3.6	3.5					2.7		
Mean Chloro.											
($\mu\text{g/l}$)	1.2	1.3	1.6	2.2					2.0		
Max. Chloro.											
($\mu\text{g/l}$)	1.6	2.2	2.6	3.3					4.3		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. ($\mu\text{g/l}$)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. ($\mu\text{g/l}$)</u>
May 23	4.1	1.1			
June 19	5.6	1.6			
June 26	4.9	0.7			
July 3	4.1	1.2			
July 17	5.2	1.5			
Aug. 1	4.6	1.1			
Aug. 14	5.0	-			
Aug. 22	5.2	-			
Aug. 28	5.5	1.3			
Sept. 5	4.6	0.7			
Mean	4.88	1.15			
Std. dev.	0.53	0.33			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Gananoque	Leeds	Rear & Front of Leeds Lansdowne TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area: 424.40	km ²	Shoreline : 33.17 km
Surface Area : 617	ha	Cottages : 111
Maximum Depth: 23.77	m	Resorts : 2 (19)
Volume : 42.82	x 10 ⁶ m ³	% Crown Land : 3

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	23	Alkalinity (mg/l)	129
Total Nitrogen (µg/l)	:	468	Colour	17

	<u>1983</u>	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.8	2.6	3.1	1.8	3.2	3.0	2.2				
Min.											
Secchi (m)	2.4	1.8	2.0	1.2	2.5	2.3	1.5				
Mean Chloro.											
(µg/l)	3.2	3.5	4.6	5.3	3.1	4.7	3.1				
Max. Chloro.											
(µg/l)	7.8	10.3	7.7	12.1	4.8	8.3	5.8				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 21	2.4	2.2			
June 21	3.4	2.1			
June 26	3.0	1.8			
July 2	3.0	1.5			
July 10	3.0	4.0			
July 24	2.4	7.8			
Aug. 6	2.7	3.0			
Aug. 13	2.7	3.6			
Sept. 5	<u>2.7</u>	<u>2.7</u>			
Mean	2.81	3.19			
Std. dev.	0.32	1.91			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Glanmire LAKE	Hastings COUNTY	Tudor TOWNSHIP(S)
Watershed Area: 7.59	km ²	Shoreline : 9.8 km
Surface Area : 91	ha	Cottages : 33
Maximum Depth: 6.7	m	Resorts : 0
Volume : 2.93	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	:	18	Alkalinity (mg/l)	35
Total Nitrogen (µg/l)	:	543	Colour	13

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ¹	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u> ¹	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.7	3.4	2.8	3.0	3.6	3.7	3.4	4.0	3.6		
Min.											
Secchi (m)	1.2	2.7	1.5	2.1	1.5	3.0	2.1	1.8	1.8		
Mean Chloro.											
(µg/l)	3.4	1.3	6.1	8.3	3.4	3.0	1.9	3.5	6.3		
Max. Chloro.											
(µg/l)	9.3	1.8	12.2	17.5	8.8	6.4	4.2	10.6	15.0		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 22	4.6	1.1			
June 30	4.6	2.9			
July 10	3.7	1.4			
July 17	4.0	1.5			
Aug. 7	6.7	1.7			
Sept. 25	2.1	2.3			
Oct. 9	1.2	9.3			
Oct. 16	<u>2.7</u>	<u>6.6</u>			
Mean	3.70	3.35			
Std. dev.	1.71	2.98			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Golden LAKE	Renfrew COUNTY	North Algona TOWNSHIP(S)
Watershed Area: 1488	km ²	Shoreline : 46.7 km
Surface Area : 3375	ha	Cottages : 397 + 43 houses
Maximum Depth: 24	m	Resorts : 18 (632)
Volume : 300	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	10	Alkalinity (mg/l)	22.3							
Total Nitrogen (µg/l)	:	360	Colour	12							
	<u>1983</u> ¹	<u>1982</u> ¹	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u> ²	<u>1977</u>	<u>1976</u> ¹	<u>1975</u>	<u>1974</u>	<u>1972</u> ²
Mean											
Secchi (m)	4.5	3.7		3.7	4.0	4.2		3.7			3.2
Min.											
Secchi (m)	4.0	2.9		2.7	3.4	3.2		3.5			
Mean Chloro.											
(µg/l)	1.7	2.6		2.6	1.7	2.0		2.2			1.5
Max. Chloro.											
(µg/l)	2.6	3.2		4.1	1.1	2.6		2.5			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 25	5.5	1.0			
Sept. 11	4.0	2.6			
Oct. 10	<u>4.0</u>	<u>1.6</u>			
Mean	4.50	1.73			
Std. dev.	0.87	0.81			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Gould LAKE	Frontenac COUNTY	Loughborough TOWNSHIP(S)
Watershed Area: 9.59	km ²	Shoreline : 2.09 km
Surface Area : 199	ha	Cottages : 24+2 houses
Maximum Depth: 61.57	m	Resorts : 1 (20)
Volume : 39.78	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1981

Total Phosphorus (µg/l)	:	9	Alkalinity (mg/l)	74
Total Nitrogen (µg/l)	:	243	Colour	6

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.9		5.9			5.9					
Min.											
Secchi (m)	5.2		4.1			4.0					
Mean Chloro.											
(µg/l)	1.3		1.9			1.1					
Max. Chloro.											
(µg/l)	1.4		2.8			1.5					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 14	5.2	1.4			
Sept. 4	6.6	1.3			
Sept. 18	<u>5.8</u>	<u>1.1</u>			
Mean	5.87	1.27			
Std. dev.	0.70	0.15			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Grippen		Leeds		Rear of Leeds	
LAKE		COUNTY		& Lansdowne	TOWNSHIP(S)
Watershed Area:	20.30	km ²	Shoreline	:	7.72 km
Surface Area :	191	ha	Cottages	:	76
Maximum Depth:	16.00	m	Resorts	:	1 (24)
Volume :	22.03	x 10 ⁶ m ³	% Crown Land :	:	0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	20	Alkalinity (mg/l)	129
Total Nitrogen (µg/l)	:	481	Colour	11

	<u>1983</u>	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.5	3.3	3.2	3.8	2.9	3.2	2.6	3.9	2.9		
Min.											
Secchi (m)	2.1	1.1	1.0	2.9	2.0	2.1	1.4	2.3	1.8		
Mean Chloro.											
(µg/l)	3.0	3.3	4.6	4.0	2.5	3.1	2.1	3.1	2.6		
Max. Chloro.											
(µg/l)	6.7	7.4	11.0	7.0	3.7	4.7	4.6	5.6	5.6		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 13	2.1	6.7			
June 26	3.7	4.1			
July 15	3.4	1.7			
July 27	4.3	2.3			
Aug. 18	3.7	1.1			
Aug. 29	3.7	3.2			
Sept. 28	<u>3.5</u>	<u>1.6</u>			
Mean	3.49	2.96			
Std. dev.	0.67	1.94			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Gunter LAKE		Hastings COUNTY	Cashel TOWNSHIP(S)	
Watershed Area:	20.6	km ²	Shoreline :	5.5 km
Surface Area :	69	ha	Cottages :	46 + 9 houses
Maximum Depth:	18.3	m	Resorts :	2
Volume :	12.63	x 10 ⁶ m ³	% Crown Land :	18

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	14	Alkalinity (mg/l)	100
Total Nitrogen (µg/l)	:	364	Colour	10

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.5	3.9	4.3	3.6			5.2				
Min.											
Secchi (m)	2.7	3.0	2.9	2.7			3.6				
Mean Chloro.											
(µg/l)	1.0	1.7	2.5	2.0			2.0				
Max. Chloro.											
(µg/l)	1.4	4.2	4.6	2.7			4.2				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
22A			22B		
June 18	3.4	0.8	June 18	3.8	1.2
July 4	3.4	0.9	July 4	3.0	1.1
July 25	-	0.9	July 25	3.4	0.8
Aug. 10	3.5	1.2	Aug. 10	3.7	1.4
Aug. 27	3.8	0.7	Aug. 27	3.4	0.9
Sept. 27	2.7	1.0	Sept. 27	3.4	0.7
Oct. 10	<u>4.0</u>	<u>1.2</u>	Oct. 10	<u>3.7</u>	<u>1.0</u>
Mean	3.47	0.96	Mean	3.49	1.01
Std. dev.	0.45	0.19	Std. dev.	0.27	0.24

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Hambly LAKE	Frontenac COUNTY	Portland TOWNSHIP(S)
Watershed Area: 8.4	km ²	Shoreline : 11.3 km
Surface Area : 89	ha	Cottages : 44+7 houses (1983)
Maximum Depth: 14.6	m	Resorts : 0
Volume : 3.55	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1983

Total Phosphorus (µg/l)	:	16	Alkalinity (mg/l)	157
Total Nitrogen (µg/l)	:	577	Colour	27

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u> ¹	<u>1980</u>	<u>1979</u> ¹	<u>1978</u> ¹	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.7		4.1	4.0	3.2	3.4	3.1				
Min.											
Secchi (m)	4.7		4.0	3.2	3.0	2.4	2.6				
Mean Chloro.											
(µg/l)	2.0		2.6	6.9	4.5	2.7	3.7				
Max. Chloro.											
(µg/l)	2.0		3.5	12.1	8.1	4.3	12.6				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 23	<u>4.7</u>	<u>2.0</u>			
Mean	4.7	2.0			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Hay Bay	Lennox & Addington COUNTY	Fredericksburgh TOWNSHIP(S)
LAKE		
Watershed Area:	km ²	Shoreline : km
Surface Area :	ha	Cottages :
Maximum Depth:	m	Resorts : 6(211)
Volume :	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ¹	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.0	1.6	1.4	1.0	1.2	1.5	1.1	0.8			
Min.											
Secchi (m)	0.9	1.1	0.9	0.5	0.7	0.8	0.9	0.8			
Mean Chloro.											
(µg/l)	11.2	11.3	14.2	19.9	16.6	12.1	16.6	16.0			
Max. Chloro.											
(µg/l)	28.2	25.0	25.0	30	34.5	33.9	35.8	23.0			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
March 14	2.3	7.3	South Shore		
April 22	1.7	3.0	June 22	3.4	1.8
May 12	1.4	6.8	June 29	1.8	6.1
June 22	3.0	2.1	Aug. 5	4.6	13.7
July 7	1.4	5.6	Sept. 18	<u>1.1</u>	<u>24.8</u>
July 20	1.2	9.2	Mean	2.73	11.60
Aug. 14	1.2	25.2	Std. dev.	1.58	10.08
Aug. 23	<u>0.9</u>	<u>28.2</u>			
Mean	1.64	10.93			
Std. dev.	0.69	10.03			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Hicks LAKE	Hastings COUNTY	Bangor TOWNSHIP(S)
Watershed Area: 1.18	km ²	Shoreline : 4.2 km
Surface Area : 35	ha	Cottages :
Maximum Depth: 24	m	Resorts :
Volume : 3.1	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

1983 1982 1981 1980 1979 1978 1977 1976 1975 1974 1973

Mean
Secchi (m) 4.5

Min.
Secchi (m) 4.0

Mean Chloro.
(µg/l) 1.5

Max. Chloro.
(µg/l) 1.9

¹ based on less than 6 measurements
² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 27	4.0	1.8			
July 19	4.5	1.4			
Aug. 17	4.5	1.1			
Sept. 7	5.0	1.6			
Sept. 27	4.5	1.1			
Oct. 31	<u>4.5</u>	<u>1.9</u>			
Mean	4.50	1.48			
Std. dev.	0.32	0.34			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Indian LAKE		Leeds COUNTY		South Crosby TOWNSHIP(S)
Watershed Area:	359	km ²	Shoreline	: 16.58 km
Surface Area :	266	ha	Cottages	: 106
Maximum Depth:	26	m	Resorts	: 2(11)
Volume :	26.79	x 10 ⁶ m ³	% Crown Land :	0

WATER CHEMISTRY 1983

Total Phosphorus (µg/l)	:	17	Alkalinity (mg/l)	84
Total Nitrogen (µg/l)	:	453	Colour	13

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1973</u>	<u>1971</u> ²
Mean											
Secchi (m)	4.3	4.3		3.9			3.6		4.6		4.2
Min.											
Secchi (m)	3.2	3.3		3.0			3.0		3.7		
Mean Chloro.											
(µg/l)	1.6	2.2		3.0			2.0		3.6		2.0
Max. Chloro.											
(µg/l)	2.6	3.4		4.1			2.7		6.7		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 20	3.2	1.8			
July 24	4.1	2.2			
Aug. 4		1.9			
Aug. 10	4.4	-			
Aug. 16	4.4	2.6			
Aug. 25	4.7	1.1			
Aug. 31	3.5	1.9			
Sept. 8	4.4	1.2			
Sept. 15	4.4	0.9			
Sept. 20	4.3	0.7			
Sept. 29	5.0	1.8			
Oct. 7	<u>4.4</u>	<u>0.9</u>			
Mean	4.25	1.55			
Std. dev.	0.51	0.62			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Joeperry		Lennox & Addington COUNTY		Effingham TOWNSHIP(S)	
LAKE					
Watershed Area:	15.4	km ²	Shoreline	: 9	km
Surface Area :	169	ha	Cottages	: 0	
Maximum Depth:	23	m	Resorts	: 0	
Volume :	12.35	x 10 ⁶ m ³	% Crown Land :	100	

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	:	9	Alkalinity (mg/l)	6.9
Total Nitrogen (µg/l)	:	293	Colour	15

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u> ¹	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.1	3.8	5.6	3.0	3.8	4.2	4.2	4.4			
Min.											
Secchi (m)	3.7	3.0	3.0	2.4	2.8	3.0	3.0	3.6			
Mean Chloro. (µg/l)	2.2	2.0	1.7	2.0	2.5	2.5	2.5	1.6			
Max. Chloro. (µg/l)	5.0	2.6	1.9	1.5	2.8	2.6	2.6	2.3			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 13	3.7	1.1			
July 27	4.3	2.0			
Aug. 10	3.7	5.0			
Aug. 24	<u>4.6</u>	<u>0.8</u>			
Mean	4.08	2.23			
Std. dev.	0.45	1.92			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Knowlton LAKE	Frontenac COUNTY	Loughborough TOWNSHIP(S)
Watershed Area: 11.2 km ²	Shoreline : 10.3 km	
Surface Area : 182 ha	Cottages : 32+1 house	
Maximum Depth: 34 m	Resorts : 0	
Volume : 17.8 x 10 ⁶ m ³	% Crown Land : 0	

WATER CHEMISTRY 1981

Total Phosphorus (µg/l)	:	9	Alkalinity (mg/l)	110
Total Nitrogen (µg/l)	:	340	Colour	9

	<u>1983</u>	<u>1982</u>	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.9		4.4						5.1		
Min.											
Secchi (m)	2.6		3.6						2.7		
Mean Chloro.											
(µg/l)	1.1		1.8						1.9		
Max. Chloro.											
(µg/l)	1.7		2.4						4.8		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 26	4.4	1.1			
July 3	5.2	-			
July 12	3.8	1.1			
July 17	2.6	0.8			
July 26	3.8	1.7			
Aug. 2	4.3	1.6			
Aug. 13	4.1	0.8			
Aug. 23	4.4	1.1			
Aug. 28	4.1	1.1			
Sept. 5	3.5	0.6			
Sept. 11	3.8	1.5			
Sept. 18	3.4	0.7			
Sept. 28	3.7	0.8			
Oct. 2	3.8	1.3			
Oct. 16	<u>3.8</u>	<u>1.3</u>			
Mean	3.91	1.11			
Std. dev.	0.57	0.34			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Limerick LAKE	Hastings COUNTY	Limerick TOWNSHIP(S)
Watershed Area: 181.41	km ²	Shoreline : 27 km
Surface Area : 744	ha	Cottages : 130 + 3 houses
Maximum Depth: 29.0	m	Resorts : 1 (14)
Volume : 62.87	x 10 ⁶ m ³	% Crown Land : 1

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	10	Alkalinity (mg/l)	94
Total Nitrogen (µg/l)	:	272	Colour	8

	<u>1983</u>	<u>1982</u>	<u>1981</u> ¹	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.4	4.4	4.4	4.7	4.4	4.9	5.0	4.9	5.0		
Min.											
Secchi (m)	4.0	4.0	3.0	3.0	4.0	3.7	3.8	4.0	4.3		
Mean Chloro.											
(µg/l)	0.9	1.2	1.3	1.5	1.4	1.3	1.2	1.1	1.1		
Max. Chloro.											
(µg/l)	1.4	1.5	2.3	2.4	1.8	1.6	3.0	1.5	1.6		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 11	5.5	0.8			
July 11	4.0	0.8			
July 19	4.0	0.7			
July 28	4.3	0.8			
Aug. 11	4.3	1.4			
Aug. 18	4.0	0.7			
Aug. 29	4.6	0.9			
Sept. 7	4.3	0.9			
Mean	4.38	0.88			
Std. dev.	0.50	0.23			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Little Cranberry LAKE	Leeds COUNTY	Rear of Leeds & Lansdowne TOWNSHIP(S)
Watershed Area:	km ²	Shoreline : km
Surface Area :	ha	Cottages :
Maximum Depth:	m	Resorts :
Volume :	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

1983 1982 1981 1980 1979 1978 1977 1976 1975 1974 1973

Mean

Secchi (m) 2.1

Min.

Secchi (m) 1.7

Mean Chloro.

(µg/l) 3.4

Max. Chloro.

(µg/l) 5.0

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 25	2.0	4.6			
Aug. 3	1.7	4.2			
Aug. 10	1.7	4.4			
Aug. 17	2.1	1.8			
Aug. 24	2.0	2.8			
Aug. 31	2.1	5.0			
Sept. 7	1.8	4.2			
Sept. 14	2.3	3.7			
Sept. 27	2.6	2.2			
Oct. 10	<u>2.9</u>	<u>1.4</u>			
Mean	2.12	3.43			
Std. dev.	0.39	1.28			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Little Silver LAKE	Lanark COUNTY	S. Sherbrooke TOWNSHIP(S)
Watershed Area: 8.1	km ²	Shoreline : 10.1 km
Surface Area : 83	ha	Cottages : 31
Maximum Depth: 12.2	m	Resorts : 0
Volume : 3.82	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1979

Total Phosphorus (µg/l)	:	14	Alkalinity (mg/l)	66
Total Nitrogen (µg/l)	:	395	Colour	13

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u> ²	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.3	4.4			3.6	5.3	4.0				
Min.											
Secchi (m)	3.5	3.5			2.3	3.8	3.0				
Mean Chloro.											
(µg/l)	1.4	2.1			4.6	2.6	4.4				
Max. Chloro.											
(µg/l)	3.1	3.5			9.2	6.0	8.8				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Turtle Rock Bay			Basin B		
June 29	4.0	3.1	June 18	5.3	2.0
July 4	4.3	1.4	June 29	3.7	2.1
July 10	4.4	1.4	July 4	4.1	1.4
July 18	5.2	0.5	July 10	4.4	1.5
July 31	4.6	1.1	July 18	4.4	0.8
Aug. 10	4.0	1.2	July 31	3.8	1.5
Aug. 22	4.3	1.2	Aug. 10	3.5	0.8
Sept. 3	<u>4.3</u>	<u>---</u>	Aug. 22	4.0	0.9
			Sept. 3	<u>4.0</u>	<u>1.1</u>
Mean	4.39	1.41	Mean	4.13	1.34
Std. dev.	0.38	0.80	Std. dev.	0.53	0.49

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Loughborough (East Basin) LAKE	Frontenac COUNTY	Storrington, Loughborough TOWNSHIP(S)
Watershed Area: 120	km ²	Shoreline : 72.4 km
Surface Area : 1065	ha	Cottages : 240+10 houses (1972)
Maximum Depth: 6.1	m	Resorts : 2 (74)
Volume : 22.08	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	26	Alkalinity (mg/l)	90
Total Nitrogen (µg/l)	:	567	Colour	15

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.6	2.8	2.9	3.2	3.3	3.0	2.8	3.4	2.4	2.7	3.3
Min.											
Secchi (m)	2.8	2.1	2.1	2.3	2.9	2.4	2.1	2.3	1.6	2.0	2.7
Mean Chloro.											
(µg/l)	2.2	3.1	4.9	5.1	3.6	3.6	3.7	2.1	4.6	2.7	3.3
Max. Chloro.											
(µg/l)	4.7	5.9	6.7	8.1	5.7	6.7	6.2	3.6	9.5	6.0	4.5

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 30	3.4	1.4			
June 8	3.7	1.6			
June 15	5.0	0.9			
June 22	4.4	3.6			
June 29	3.4	1.5			
July 7	3.0	2.7			
July 20	3.2	1.4			
Aug. 3	2.8	2.2			
Aug. 17	3.4	1.3			
Sept. 1	3.7	1.7			
Sept. 15	2.9	-			
Sept. 28	3.4	-			
Oct. 12	3.7	4.7			
Oct. 27	4.0	-			
Nov. 8	<u>3.4</u>	<u>3.0</u>			
Mean	3.56	2.17			
Std. dev.	0.57	1.13			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Loughborough (W. Basin)	Frontenac	Storrington, Loughborough TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area: 58	km ²	Shoreline : 28.7 km
Surface Area : 738	ha	Cottages : 138 + 13 houses (1972)
Maximum Depth: 38.4	m	Resorts : 3 (187)
Volume : 107.13	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1981

Total Phosphorus (µg/l)	:	16	Alkalinity (mg/l)	114
Total Nitrogen (µg/l)	:	365	Colour	9

	<u>1983</u>	<u>1982</u>	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u> ¹	<u>1973</u>
Mean											
Secchi (m)	5.5	6.0	6.4	4.8	4.0	3.9	3.4	4.5	4.2	3.8	4.0
Min.											
Secchi (m)	4.6	5.5	4.1	3.4	2.8	3.0	2.3	3.8	2.6	2.8	3.2
Mean Chloro.											
(µg/l)	1.6	1.4	2.5	2.5	2.0	1.8	2.2	2.5	2.0	2.0	1.2 ¹
Max. Chloro.											
(µg/l)	3.2	2.9	3.8	5.0	2.7	2.6	3.8	3.1	4.2	2.4	1.3

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 12	4.6	1.7			
June 24	5.0	1.6			
July 8	7.0	0.7			
July 17	5.6	2.3			
July 31	5.0	3.2			
Aug. 9	4.7	1.6			
Aug. 21	6.1	1.1			
Sept. 4	7.0	0.8			
Sept. 18	5.3	1.1			
Oct. 2	<u>4.7</u>	<u>1.4</u>			
Mean	5.50	1.55			
Std. dev.	0.91	0.75			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Lyndhurst LAKE	Leeds COUNTY	Rear of Leeds & Lansdowne TOWNSHIP(S)
Watershed Area: 260	km ²	Shoreline : 0.5 km
Surface Area : 29	ha	Cottages : 2+2 houses
Maximum Depth: 9.2	m	Resorts : 3(46)
Volume : 1.04	$\times 10^6$ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus ($\mu\text{g/l}$)	:	30	Alkalinity (mg/l)	123
Total Nitrogen ($\mu\text{g/l}$)	:	584	Colour	23

1983¹ 1982² 1981² 1980 1979 1978 1977 1976 1975 1974 1973

Mean

Secchi (m) 2.5 1.9 2.1

Min.

Secchi (m) 2.0 1.1 1.3

Mean Chloro.

($\mu\text{g/l}$) 7.7 6.2 6.4

Max. Chloro.

($\mu\text{g/l}$) 13.4 16.5 11.0

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. ($\mu\text{g/l}$)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. ($\mu\text{g/l}$)</u>
July 21	3.0	13.4			
Aug. 5	2.0	8.4			
Aug. 19	2.0	4.8			
Sept. 15	2.3	4.0			
Sept. 29	<u>3.0</u>	<u>8.0</u>			
Mean	2.46	7.72			
Std. dev.	0.51	3.71			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Mackie LAKE	Frontenac COUNTY	Miller TOWNSHIP(S)
Watershed Area: 40.52	km ²	Shoreline : 11.3 km
Surface Area : 157	ha	Cottages : 56
Maximum Depth: 22.9	m	Resorts : 1 (34)
Volume : 13.43	x 10 ⁶ m ³	% Crown Land : 5

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	5	Alkalinity (mg/l)	32
Total Nitrogen (µg/l)	:	298	Colour	14

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.3	5.1	6.1	5.1	6.7	6.1	6.3	5.8			6.6
Min.											
Secchi (m)	4.3	3.7	4.9	3.7	5.5	4.9	5.0	4.4			4.8
Mean Chloro.											
(µg/l)	2.1	2.0	2.3	4.4	4.6	2.5	1.8	1.9			0.5
Max. Chloro.											
(µg/l)	3.8	5.4	3.6	10.6	12.2	5.7	3.7	4.0			0.7

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 27	4.3	3.2			
June 21	5.2	3.8			
July 18	5.5	1.9			
Aug. 11	5.5	1.4			
Aug. 31	5.9	1.6			
Sept. 19	<u>5.5</u>	<u>0.6</u>			
Mean	5.32	2.08			
Std. dev.	0.55	1.19			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Mazinaw LAKE	Frontenac, Lennox & Addington COUNTY	Abinger, Barrie TOWNSHIP(S)
Watershed Area: 137.85	km ²	Shoreline : 49.1 km
Surface Area : 1590	ha	Cottages : 254 (1972)
Maximum Depth: 144.8	m	Resorts : 3 (47), 5 (765)
Volume : 655	x 10 ⁶ m ³	% Crown Land : 50 Prov. Park

WATER CHEMISTRY 1971

Total Phosphorus (µg/l)	:	9	Alkalinity (mg/l)	18
Total Nitrogen (µg/l)	:	270	Colour	

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1973</u>	<u>1971</u> ²
Mean											
Secchi (m)	3.6	3.5	4.7	4.6	5.2	5.0	4.9	5.3	5.7		5.2
Min.											
Secchi (m)	2.7	2.4	3.0	3.0	3.4	4.2	3.0	4.2	5.2		3.6
Mean Chloro. (µg/l)	1.0	1.2	1.2	1.7	1.4	1.0	1.2	1.2	1.1		1.0
Max. Chloro. (µg/l)	1.3	1.6	1.6	2.5	3.1	1.7	2.6	1.6	1.7		1.9

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 13	2.7	0.6			
July 27	4.3	1.3			
Aug. 10	3.0	-			
Aug. 24	<u>4.3</u>	<u>---</u>			
Mean	3.58	0.95			
Std. dev.	0.85	0.49			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Meach LAKE	Hastings COUNTY	McClure TOWNSHIP(S)
Watershed Area: 6.7	km ²	Shoreline : 4.2 km
Surface Area : 42	ha	Cottages :
Maximum Depth: 12	m	Resorts :
Volume : 2.0	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

1983¹ 1982 1981 1980 1979 1978 1977 1976 1975 1974 1973

Mean
Secchi (m) 4.2

Min.
Secchi (m) 4.0

Mean Chloro.
(µg/l) 4.5

Max. Chloro.
(µg/l) 11.6

¹ based on less than 6 measurements
² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 28	4.0	1.8			
July 19	4.5	2.9			
Aug. 10	4.0	11.6			
Sept. 6	4.3	4.6			
Oct. 27	<u>4.0</u>	<u>1.5</u>			
Mean	4.16	4.48			
Std. dev.	0.23	4.16			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Mississippi	Lanark	Drummond, Beckwith, Ramsay
LAKE	COUNTY	TOWNSHIP(S)
Watershed Area: 2900	km ²	Shoreline : 58 km
Surface Area : 2346	ha	Cottages : 1278 + 11 houses
Maximum Depth: 9.2	m	Resorts : 16 (1121)
Volume : 64.33	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	26	Alkalinity (mg/l)	84
Total Nitrogen (µg/l)	:	460	Colour	25

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.8	2.6	2.5	2.7	3.9	4.1	3.4		2.5	3.6	4.3
Min.											
Secchi (m)	1.8	1.7	1.7	1.8	1.5	3.5	2.9		2.0	2.6	
Mean Chloro.											
(µg/l)	1.6	3.6	4.9	3.0	2.1	2.0	1.8		9.1	2.0	2.2
Max. Chloro.											
(µg/l)	2.4	8.8	14.0	4.3	9.2	3.1	2.8		16.0	4.7	

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 20	3.0	2.4			
July 5	3.0	1.1			
July 13	3.7	1.1			
July 26	4.0	1.5			
Aug. 1	1.8	1.6			
Aug. 15	2.7	1.3			
Aug. 23	2.4	0.5			
Aug. 31	<u>1.8</u>	<u>3.0</u>			
Mean	2.80	1.56			
Std. dev.	0.80	0.79			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Moir (East Basin) LAKE	Hastings COUNTY	Huntington TOWNSHIP(S)
Watershed Area: 596	km ²	Shoreline : 14.7 km
Surface Area : 611	ha	Cottages :
Maximum Depth: 11	m	Resorts :
Volume :	x 10 ⁶ m ³	% Crown Land: 0

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)	166
Total Nitrogen (µg/l)	:	Colour	

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u> ¹	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	1.8	2.0	3.1		2.0	2.0	2.0			2.1	
Min.											
Secchi (m)	1.1	1.2	2.2		0.9	1.4	1.4			0.8	
Mean Chloro.											
(µg/l)	10.1	11.3	5.1		10.2	8.0	7.2			9.2	
Max. Chloro.											
(µg/l)	27.0	28.8	14.0		29.5	18.2	20.7			51.0	

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 28	3.1	2.7			
June 11	3.0	3.6			
June 26	2.4	7.2			
July 13	1.8	8.9			
July 24	1.4	6.8			
Aug. 7	1.2	12.7			
Aug. 10	1.2	5.5			
Sept. 5	1.1	16.3			
Oct. 9	<u>1.2</u>	<u>27.0</u>			
Mean	1.82	10.08			
Std. dev.	0.81	7.66			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Moir (West Basin) LAKE	Hastings COUNTY	Huntington TOWNSHIP(S)
Watershed Area: 546	km ²	Shoreline : 9.3 km
Surface Area : 216	ha	Cottages :
Maximum Depth: 7.3	m	Resorts :
Volume :	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 19

Total Phosphorus (µg/l) : Alkalinity (mg/l)
Total Nitrogen (µg/l) : Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m) 1.8					1.9	2.0				1.7	
Min.											
Secchi (m) 0.8					1.4	1.4				1.0	
Mean Chloro.											
(µg/l) 4.6					6.5	8.1				9.2	
Max. Chloro.											
(µg/l) 12.0					15.6	18.2				24.5	

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
May 31	2.1	1.5	July 20	<u>2.0</u>	<u>5.5</u>
June 8	3.0	2.9			
June 16	1.4	3.4	Mean	2.0	5.5
June 23	3.0	4.2			
July 12	1.8	4.1			
July 17	2.0	0.8			
July 20	1.7	6.8			
Aug. 2	1.4	4.5			
Aug. 17	0.9	5.1			
Aug. 24	<u>0.8</u>	<u>12.0</u>			
Mean	1.81	4.53			
Std. dev.	0.76	3.14			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Mosque (Main Basin) LAKE	Frontenac COUNTY	Miller, Clarendon TOWNSHIP(S)
Watershed Area: 6.21	km ²	Shoreline : 13.2 km
Surface Area : 138	ha	Cottages : 43
Maximum Depth: 34.1	m	Resorts : 1 (3)
Volume : 9.70	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	4	Alkalinity (mg/l)	37
Total Nitrogen (µg/l)	:	305	Colour	5

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.4	5.0	5.6	6.0	5.6	5.5	5.2	6.3			
Min.											
Secchi (m)	4.3	4.3	3.7	4.9	3.4	4.6	4.6	3.8			
Mean Chloro.											
(µg/l)	0.9	1.4	1.4	1.6	1.4	1.7	1.7	1.8			
Max. Chloro.											
(µg/l)	1.4	2.6	2.5	2.1	2.0	3.8	3.8	5.9			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
St. 1			St. 2		
May 15	4.3	1.0	May 15	4.3	0.8
June 18	6.7	1.4	June 18	5.2	0.9
July 4	6.4	-	July 4	6.1	-
July 18	6.1	1.0	July 18	6.4	0.7
July 31	5.2	1.3	July 31	5.5	1.0
Aug. 13	5.0	0.9	Aug. 13	5.3	0.9
Aug. 24	4.9	0.3	Aug. 24	5.2	0.6
Sept. 5	5.2	-	Sept. 5	5.2	-
Sept. 18	5.3	0.7	Sept. 18	5.4	-
Oct. 10	<u>5.2</u>	<u>1.2</u>	Oct. 10	<u>4.6</u>	<u>1.3</u>
Mean	5.43	0.98	Mean	5.32	0.89
Std. dev.	0.74	0.35	Std. dev.	0.62	0.23

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Mosque (West Basin) LAKE	Frontenac COUNTY	Miller, Clarendon TOWNSHIP(S)
Watershed Area: 6.21	km ²	Shoreline : 13.2 km
Surface Area : 138	ha	Cottages : 43
Maximum Depth: 34.1	m	Resorts : 1(3)
Volume : 9.7	x 10 ⁶ m ³	% Crown Land : 65

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	:	18	Alkalinity (mg/l)	38
Total Nitrogen (µg/l)	:	350	Colour	8

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ¹	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.2	4.0	4.5	5.1	4.6	4.5	3.9	4.8			
Min.											
Secchi (m)	3.4	3.0	3.9	4.0	3.7	3.7	3.4	2.9			
Mean Chloro.											
(µg/l)	1.4	1.3	1.7	2.6	3.2	3.7	2.9	4.6			
Max. Chloro.											
(µg/l)	2.6	2.0	3.1	3.7	4.5	5.9	5.4	11.0			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 15	3.4	1.9			
June 18	6.1	1.4			
July 4	4.0	1.3			
July 18	5.2	1.4			
July 31	4.0	1.4			
Aug. 13	4.0	1.3			
Aug. 24	3.5	0.8			
Sept. 5	4.3	-			
Sept. 18	4.0	0.9			
Oct. 10	<u>3.7</u>	<u>2.6</u>			
Mean	4.22	1.44			
Std. dev.	0.83	0.54			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Muskrat LAKE	Renfrew COUNTY	Westmeath, Ross TOWNSHIP(S)
Watershed Area: 481	km ²	Shoreline : 34.0 km
Surface Area : 1202	ha	Cottages : 132 + 21 houses
Maximum Depth: 64	m	Resorts : 5 (357)
Volume : 213.2	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	33	Alkalinity (mg/l)	118
Total Nitrogen (µg/l)	:	597	Colour	20

	<u>1983</u>	<u>1982</u> ²	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u> ²	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.3	2.3	1.6		2.4	2.8	1.7				
Min.											
Secchi (m)	1.4	1.1	0.9		1.8	1.6	1.2				
Mean Chloro.											
(µg/l)	9.3	9.9	19.6		7.1	8.0	10.3				
Max. Chloro.											
(µg/l)	18.3	37.8	71.0		2.5	60.8	28.0				

¹ based on less than 6 measurements
² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 7	-	1.1			
July 20	3.5	-			
July 27	2.9	7.0			
Aug. 3	2.4	6.8			
Aug. 10	2.0	12.9			
Aug. 17	1.4	14.5			
Aug. 24	2.0	4.2			
Aug. 31	<u>1.7</u>	<u>18.3</u>			
Mean	2.27	9.26			
Std. dev.	0.73	6.13			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

McKay	Regional Municipality		Village of	
LAKE	of Ottawa-Carleton		Rockcliffe Park	
	COUNTY		TOWNSHIP(S)	
Watershed Area:	km ²	Shoreline	:	km
Surface Area :	ha	Cottages	:	0
Maximum Depth:	m	Resorts	:	0
Volume :	x 10 ⁶ m ³	% Crown Land	:	0

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.0	2.4									
Min.											
Secchi (m)	1.1	1.1									
Mean Chloro.											
(µg/l)	5.6	1.6									
Max. Chloro.											
(µg/l)	18.8	3.6									

¹ based on less than 6 measurements
² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 1	1.2	1.6			
June 12	1.3	1.3			
June 19	2.6	5.0			
June 27	3.0	18.8			
July 10	2.3	1.6			
July 17	2.8	4.0			
Aug. 28	<u>1.1</u>	<u>6.7</u>			
Mean	2.04	5.57			
Std. dev.	0.82	6.18			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

McKay Lake - The Pond	Regional Municipality of Ottawa-Carleton	Village of Rockcliffe Park
LAKE	COUNTY	TOWNSHIP(S)
Watershed Area:	km ²	Shoreline : km
Surface Area :	ha	Cottages :
Maximum Depth:	m	Resorts :
Volume :	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	Alkalinity (mg/l)
Total Nitrogen (µg/l)	:	Colour

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.8	3.2									
Min.											
Secchi (m)	1.4	1.8									
Mean Chloro.											
(µg/l)	1.6	1.8									
Max. Chloro.											
(µg/l)	2.4	3.7									

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 1	1.4	1.3			
June 12	3.0	2.4			
June 19	1.5	2.3			
June 27	1.7	1.8			
July 10	4.0	0.6			
July 17	4.0	1.5			
Aug. 28	<u>3.8</u>	<u>1.6</u>			
Mean	2.77	1.64			
Std. dev.	1.21	0.61			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Norway LAKE	Renfrew COUNTY	Bagot & Blythfield TOWNSHIP(S)
Watershed Area: 14.4	km ²	Shoreline : 12.9 km
Surface Area : 271	ha	Cottages : 124
Maximum Depth: 36.6	m	Resorts : 0
Volume : 25.38	x 10 ⁶ m ³	% Crown Land : 99

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	103
Total Nitrogen (µg/l)	:	450	Colour	8

	<u>1983</u>	<u>1982</u> ¹	<u>1981</u> ¹	<u>1980</u>	<u>1979</u>	<u>1978</u> ²	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.1	4.8	5.1		4.7	4.8					
Min.											
Secchi (m)	4.0	4.0	3.9		3.5	3.0					
Mean Chloro.											
(µg/l)	2.2	0.9	1.0		1.7	1.6					
Max. Chloro.											
(µg/l)	8.0	1.0	1.4		3.8	3.2					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 23	4.0	2.4			
June 11	5.5	8.0			
July 2	5.2	1.2			
July 17	5.8	2.1			
Aug. 2	4.9	0.6			
Aug. 15	4.7	0.9			
Aug. 21	5.3	1.2			
Sept. 18	5.2	1.7			
Oct. 2	<u>5.2</u>	<u>1.5</u>			
Mean	5.09	2.18			
Std. dev.	0.52	2.25			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Olmsted (Jeffreys) LAKE	Renfrew COUNTY	Ross TOWNSHIP(S)
Watershed Area: 26.8	km ²	Shoreline : 10.6 km
Surface Area : 180	ha	Cottages : 98
Maximum Depth: 29.3	m	Resorts : 2(305)
Volume : 11.6	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	12	Alkalinity (mg/l)	88
Total Nitrogen (µg/l)	:	345	Colour	9

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u> ²	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	6.7	6.2	5.7	5.4	6.3	6.0	6.3				
Min.											
Secchi (m)	5.5	5.5	4.3	4.9	5.5	4.2	4.3				
Mean Chloro.											
(µg/l)	1.1	1.2	2.0	2.6	1.2	1.5	1.4				
Max. Chloro.											
(µg/l)	1.4	2.5	5.8	3.1	1.9	3.7	5.4				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 10	8.8	0.8			
June 20	5.5	1.1			
July 14	6.1	1.0			
July 29	5.8	1.3			
Aug. 14	5.5	1.0			
Aug. 29	7.0	1.2			
Sept. 12	7.3	-			
Sept. 24	7.9	0.7			
Oct. 13	<u>6.4</u>	<u>1.4</u>			
Mean	6.70	1.06			
Std. dev.	1.14	0.24			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Opinicon	Frontenac, Leeds		Bedford, South	
LAKE	COUNTY		Crosby, Storrington	
			TOWNSHIP(S)	
Watershed Area:	580	km ²	Shoreline	: 52 km
Surface Area :	785	ha	Cottages	: 120 (1971)
Maximum Depth:	9.15	m	Resorts	: 6 (104)
Volume :	38.31	x 10 ⁶ m ³	% Crown Land :	0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	28	Alkalinity (mg/l)	72
Total Nitrogen (µg/l)	:	537	Colour	7

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.2	3.1	3.2	3.2	3.3	3.0	2.8		3.0		
Min.											
Secchi (m)	2.4	2.6	2.7	2.4	2.7	2.7	2.3		2.3		
Mean Chloro.											
(µg/l)	2.2	2.7	3.1	3.9	3.7	3.6	2.6		3.1		
Max. Chloro.											
(µg/l)	3.2	5.0	6.3	7.3	12.4	7.1	3.8		5.2		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
May 30	3.5	1.5	July 17	4.0	2.2
June 8	4.4	1.2	July 23	3.4	1.9
June 20	4.7	1.9	July 30	3.0	2.2
June 28	4.4	1.8	Aug. 6	3.2	2.3
July 4	3.5	2.1	Aug. 14	2.6	1.0
July 10	3.4	2.1	Aug. 21	3.0	3.2
July 17	3.5	1.5	Aug. 28	3.0	3.1
July 24	2.9	2.9	Sept. 4	<u>2.4</u>	<u>2.6</u>
Aug. 3	3.5	2.5			
Aug. 8	2.9	2.3	Mean	3.08	2.31
Aug. 15	2.9	1.8	Std. dev.	0.49	0.70
Aug. 23	2.6	-			
Aug. 28	2.7	2.4			
Sept. 7	2.4	2.4			
Sept. 18	2.7	2.1			
Sept 25	<u>2.4</u>	<u>3.1</u>			
Mean	3.28	2.11			
Std. dev.	0.72	0.52			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Otter	Leeds	Bastard, South Elmsley, South Burgess, Kitley TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area:	46.55 km ²	Shoreline : 255 km
Surface Area :	602 ha	Cottages : 290 + 5 houses
Maximum Depth:	36.6 m	Resorts : 6(214)
Volume :	60.46 x 10 ⁶ m ³	% Crown Land : 1

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	9	Alkalinity (mg/l)	134
Total Nitrogen (µg/l)	:	394	Colour	14

	<u>1983</u>	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.2	3.1	3.1	2.7	3.1	3.3	3.0	3.2	3.4		
Min.											
Secchi (m)	2.4	2.3	2.0	2.4	2.4	2.7	1.8	2.4	2.4		
Mean Chloro.											
(µg/l)	1.4	1.5	2.1	2.3	2.3	2.0	2.1	2.4	1.6		
Max. Chloro.											
(µg/l)	3.4	4.6	3.0	3.4	5.2	3.1	3.5	4.2	2.3		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
June 19	3.5	1.8	June 12	3.0	1.3
June 28	4.1	1.6	June 19	3.4	2.2
July 12	3.5	0.6	June 25	3.7	1.1
July 17	3.6	0.9	July 2	3.2	1.3
July 24	3.2	1.4	July 10	3.7	1.4
July 31	3.1	1.6	July 17	4.0	1.2
Aug. 7	3.4	1.5	July 23	2.7	1.2
Aug. 14	3.5	3.4	Aug. 6	2.7	1.5
Aug. 21	3.3	1.1	Aug. 13	2.7	1.4
Aug. 29	3.0	-	Aug. 21	2.7	1.1
Sept. 5	2.9	0.7	Aug. 28	2.4	1.6
Sept. 18	3.0	1.6	Sept. 11	<u>2.7</u>	<u>1.3</u>
Sept. 26	3.3	1.1			
Oct. 2	<u>3.4</u>	<u>1.5</u>	Mean	3.08	1.38
			Std. dev.	0.52	0.30
Mean	3.34	1.45			
Std. dev.	0.31	0.70			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Otter LAKE	Frontenac COUNTY	Loughborough TOWNSHIP(S)
Watershed Area: 37.38	km ²	Shoreline : 15.8 km
Surface Area : 142	ha	Cottages : 28
Maximum Depth: 15	m	Resorts : 1
Volume :	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	40
Total Nitrogen (µg/l)	:	502	Colour	14

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u> ²	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.0					5.1					
Min.											
Secchi (m)	2.7					4.2					
Mean Chloro.											
(µg/l)	2.6					1.9					
Max. Chloro.											
(µg/l)	4.1					2.4					

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 7	4.7	2.4			
Aug. 14	5.6	-			
Aug. 21	4.9	1.5			
Aug. 28	5.0	1.8			
Sept. 5	4.3	1.6			
Sept. 11	3.7	4.1			
Sept. 18	3.4	2.7			
Sept. 25	2.7	3.6			
Oct. 2	3.0	3.1			
Oct. 10	<u>2.7</u>	<u>2.6</u>			
Mean	4.00	2.60			
Std. dev.	1.04	0.89			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Otty		Lanark		North Burgess,
LAKE		COUNTY		North Elmsley TOWNSHIP(S)
Watershed Area:	47.9	km ²	Shoreline	: 35.4 km
Surface Area :	625	ha	Cottages	: 336 + 41 houses
Maximum Depth:	27.4	m	Resorts	: 3 (27)
Volume :	56.41	x 10 ⁶ m ³	% Crown Land:	0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	16	Alkalinity (mg/l)	95
Total Nitrogen (µg/l)	:	485	Colour	10

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.5	4.7	3.9	4.5	4.4	4.2	4.0	4.5	4.4	3.8	4.1
Min.											
Secchi (m)	3.7	3.9	3.0	3.8	3.3	3.5	3.1	3.2	3.4	2.8	3.0
Mean Chloro.											
(µg/l)	1.3	2.2	2.2	2.7	2.1	2.1	1.7	1.8	2.1	1.1	1.9
Max. Chloro.											
(µg/l)	3.6	3.7	3.2	3.8	2.8	2.7	2.6	4.3	3.3	2.2	3.8

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Station A			Station B		
June 25	4.9	2.2	June 25	4.7	1.1
July 2	4.6	1.2	July 2	4.0	1.4
July 10	5.8	1.1	July 10	5.7	0.8
July 18	5.5	3.6	July 18	5.3	2.1
July 27	5.4	1.5	July 27	5.5	1.5
Aug. 2	4.1	1.1	Aug. 2	4.3	1.3
Aug. 7	5.3	-	Aug. 7	4.4	1.1
Aug. 15	3.8	-	Aug. 15	4.0	1.1
Aug. 22	4.1	1.4	Aug. 22	4.0	1.2
Aug. 31	4.0	1.6	Aug. 31	3.7	1.5
Sept. 5	3.7	0.9	Sept. 5	3.7	0.8
Sept. 11	3.7	1.0	Sept. 11	3.8	1.0
Sept. 18	<u>4.6</u>	<u>0.7</u>	Sept. 18	<u>4.8</u>	<u>0.6</u>
Mean	4.58	1.48	Mean	4.45	1.19
Std. dev.	0.74	0.81	Std. dev.	0.69	0.39

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Papineau LAKE	Hastings COUNTY	Wicklow, Bangor TOWNSHIP(S)
Watershed Area: 48	km ²	Shoreline : 21.9 km
Surface Area : 783	ha	Cottages : 266
Maximum Depth: 64	m	Resorts : 4(39)
Volume : 143	x 10 ⁶ m ³	% Crown Land : 26

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	9	Alkalinity (mg/l)	7.7
Total Nitrogen (µg/l)	:	211	Colour	8

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	6.9						8.1				
Min.											
Secchi (m)	6.1						6.4				
Mean Chloro.											
(µg/l)	0.9						1.4				
Max. Chloro.											
(µg/l)	1.5						2.7				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 19	7.0	1.5			
June 26	7.0	1.1			
July 5	6.7	0.7			
July 12	8.1	0.7			
July 26	7.0	0.8			
Aug. 3	-	0.9			
Aug. 8	6.7	1.1			
Aug. 14	6.7	-			
Aug. 28	7.3	0.6			
Sept. 5	6.1	0.5			
Oct. 10	<u>6.4</u>	<u>0.9</u>			
Mean	6.90	0.88			
Std. dev.	0.54	0.29			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Paugh LAKE	Renfrew COUNTY	Burns, Sherwood TOWNSHIP(S)
Watershed Area: 75	km ²	Shoreline : 18 km
Surface Area : 713	ha	Cottages : 77
Maximum Depth: 51.8	m	Resorts : 1 (7)
Volume : 100	x 10 ⁶ m ³	% Crown Land : 80

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	10	Alkalinity (mg/l)	9
Total Nitrogen (µg/l)	:	218	Colour	10

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.5	5.2	5.3	5.2			5.4				
Min.											
Secchi (m)	5.2	4.6	4.6	4.7			4.0				
Mean Chloro.											
(µg/l)	0.9	0.9	1.3	1.5			1.0				
Max. Chloro.											
(µg/l)	1.3	1.5	2.9	2.1			1.6				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 5	5.2	0.8			
June 19	6.1	0.8			
July 3	5.2	0.9			
July 10	5.2	0.6			
July 19	4.9	1.3			
Aug. 7	-	1.3			
Aug. 21	6.1	0.7			
Aug. 28	<u>5.6</u>	<u>0.8</u>			
Mean	5.47	0.90			
Std. dev.	0.48	0.26			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Pike	Lanark, Leeds		North Burgess, North Crosby TOWNSHIP(S)	
LAKE	COUNTY			
Watershed Area:	60.0	km ²	Shoreline :	22.1 km
Surface Area :	316	ha	Cottages :	143 (1974)
Maximum Depth:	32.6	m	Resorts :	2 (38)
Volume :	26.58	x 10 ⁶ m ³	% Crown Land :	0

WATER CHEMISTRY 1983

Total Phosphorus (µg/l)	:	35	Alkalinity (mg/l)	61
Total Nitrogen (µg/l)	:	480	Colour	23

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.2	2.5	3.7	3.8	3.7	4.2	3.1	2.4	3.9		
Min.											
Secchi (m)	2.7	2.1	2.7	3.2	1.7	2.7	2.1	2.0	2.6		
Mean Chloro.											
(µg/l)	2.2	3.6	3.6	4.3	4.0	2.8	4.0	4.4	3.4		
Max. Chloro.											
(µg/l)	5.5	6.6	7.8	12.0	5.2	4.0	8.2	8.0	5.5		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
May 21	3.7	2.2	May 23	3.4	3.4
June 12	6.1	1.0	June 12	6.4	1.2
July 6	4.9	2.4	June 20	4.0	2.5
July 17	5.8	1.6	July 18	5.2	2.7
Aug. 2	3.4	2.7	Aug. 14	3.4	0.9
Aug. 13	4.0	1.1	Oct. 10	3.0	4.0
Aug. 21	3.7	1.6	Oct. 30	<u>2.7</u>	<u>5.5</u>
Aug. 28	3.4	1.8			
Sept. 10	<u>4.0</u>	<u>0.7</u>	Mean	4.01	2.89
			Std. dev.	1.33	1.60
Mean	4.33	1.68			
Std. dev.	1.02	0.67			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Red Horse (East Basin) LAKE	Leeds COUNTY	Rear of Leeds & Lansdowne TOWNSHIP(S)
Watershed Area: 335	km ²	Shoreline : 12.9 km
Surface Area : 135	ha	Cottages : 24
Maximum Depth: 37	m	Resorts : 1 (16)
Volume : 15.55	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	21	Alkalinity (mg/l)	134
Total Nitrogen (µg/l)	:	457	Colour	19

	<u>1983</u> ¹	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.3	2.7	2.8						3.8		
Min.											
Secchi (m)	4.3	2.0	2.5						2.6		
Mean Chloro.											
(µg/l)	2.0	3.1	5.2						3.7		
Max. Chloro.											
(µg/l)	2.0	4.1	10.0						4.9		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Sept. 5	<u>4.3</u>	<u>2.0</u>			
Mean	4.3	2.0			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Red Horse (West Basin)	Leeds	Rear of Leeds & Lansdowne TOWNSHIP(S)
LAKE	COUNTY	
Watershed Area: 330	km ²	Shoreline : 13.8 km
Surface Area : 167	ha	Cottages : 18 (1976)
Maximum Depth: 37	m	Resorts : 0
Volume : 15.07	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	20	Alkalinity (mg/l)	129
Total Nitrogen (µg/l)	:	488	Colour	19

	<u>1983</u>	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.1	3.3	3.2	3.4	3.4				3.7		
Min.											
Secchi (m)	2.6	2.0	2.0	2.1	2.3				2.4		
Mean Chloro.											
(µg/l)	2.9	2.9	5.2	6.1	4.4				4.0		
Max. Chloro.											
(µg/l)	4.6	4.1	9.9	14	5.3				5.8		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 11	4.0	2.8			
June 19	4.0	2.8			
July 3	3.7	2.5			
July 10	4.0	3.7			
July 24	3.7	3.9			
Aug. 3	3.5	2.4			
Aug. 14	2.6	4.6			
Aug. 22	4.3	-			
Aug. 30	4.9	2.3			
Sept. 5	5.0	2.1			
Sept. 18	4.7	3.0			
Sept. 25	4.7	2.1			
Oct. 10	4.6	2.1			
Mean	4.13	2.86			
Std. dev.	0.67	0.81			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Robertson LAKE		Lanark COUNTY		Lavant TOWNSHIP(S)
Watershed Area:	3.8	km ²	Shoreline	: 8.2 km
Surface Area :	64	ha	Cottages	: 38 + 13 houses
Maximum Depth:	30.5	m	Resorts	: 1 (12)
Volume :	3.80	x 10 ⁶ m ³	% Crown Land :	5

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	6	Alkalinity (mg/l)	73.7
Total Nitrogen (µg/l)	:	308	Colour	11

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u> ¹	<u>1978</u> ²	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	5.8	6.4	6.7	5.9	6.9	6.4	6.5				
Min.											
Secchi (m)	5.0	5.8	5.6	4.3	6.7	5.0	4.3				
Mean Chloro.											
(µg/l)	0.8	0.9	1.0	2.3	2.4	1.5	1.3				
Max. Chloro.											
(µg/l)	1.7	2.1	1.2	9.7	1.1	2.4	2.4				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
#1			#2		
July 24	5.2	0.8	July 10	5.5	1.0
July 27	5.6	0.6	July 14	<u>5.9</u>	<u>1.7</u>
Aug. 13	6.4	0.5			
Aug. 18	5.0	0.6	Mean	5.70	1.35
Aug. 23	7.0	0.5	Std. dev.	0.28	0.49
Sept. 19	<u>5.8</u>	<u>0.4</u>			
Mean	5.83	0.57			
Std. dev.	0.75	0.14			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Salmon Trout LAKE	Hastings COUNTY	Monteagle TOWNSHIP(S)
Watershed Area: 9.25	km ²	Shoreline : 7.9 km
Surface Area : 100	ha	Cottages : 70
Maximum Depth: 14.0	m	Resorts : 0
Volume : 3.80	x 10 ⁶ m ³	% Crown Land : 21

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	17	Alkalinity (mg/l)	18.2
Total Nitrogen (µg/l)	:	406	Colour	10

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.9	3.7	3.5	3.3	3.2	4.2	3.7	3.4	3.0 ¹	3.7	
Min.											
Secchi (m)	2.6	2.4	2.7	2.4	2.4	3.2	1.8	2.2	1.1	3.2	
Mean Chloro.											
(µg/l)	3.1	2.4	3.7	11.7	7.4	5.0	4.1	6.6	7.9 ¹	1.4	
Max. Chloro.											
(µg/l)	6.7	6.1	9.0	21.0	16	6.9	11.0	10.0	21.0	3.0	

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 29	2.9	2.1			
June 19	4.9	1.0			
July 13	4.0	1.3			
July 27	4.3	1.6			
Aug. 7	3.7	4.9			
Aug. 21	4.6	3.9			
Oct. 9	<u>2.6</u>	<u>6.7</u>			
Mean	3.86	3.07			
Std. dev.	0.85	2.15			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Sand LAKE	Leeds COUNTY	South Crosby TOWNSHIP(S)
Watershed Area: 7.32	km ²	Shoreline : 51.5 km
Surface Area : 732	ha	Cottages : 110
Maximum Depth: 14.3	m	Resorts : 3 (36)
Volume : 37.81	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	24	Alkalinity (mg/l)	76
Total Nitrogen (µg/l)	:	411	Colour	5

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.7			3.1					3.7		
Min.											
Secchi (m)	2.3			2.4					2.3		
Mean Chloro.											
(µg/l)	2.2			4.8					3.8		
Max. Chloro.											
(µg/l)	3.4			20.0					8.4		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 29	2.9	2.0			
June 8	2.9	2.2			
June 19	2.9	1.6			
June 28	3.2	0.9			
July 10	2.9	2.4			
July 24	2.3	2.0			
Aug. 4	2.3	3.4			
Aug. 21	2.6	2.0			
Aug. 28	2.6	2.9			
Sept. 14	2.3	2.2			
Sept. 27	2.3	2.5			
Oct. 16	2.3	2.7			
Oct. 30	<u>3.0</u>	<u>2.3</u>			
Mean	2.65	2.24			
Std. dev.	0.33	0.61			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Shabomeka LAKE	Frontenac COUNTY	Barrie TOWNSHIP(S)
Watershed Area: 40.9	km ²	Shoreline : 13.7 km
Surface Area : 268	ha	Cottages : 104
Maximum Depth: 32	m	Resorts : 0
Volume : 33.19	x 10 ⁶ m ³	% Crown Land : 50

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	8	Alkalinity (mg/l)	29
Total Nitrogen (µg/l)	:	298	Colour	14

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.8		4.4	5.1				5.1			
Min.											
Secchi (m)	4.3		3.9	3.2				3.6			
Mean Chloro.											
(µg/l)	1.4		2.1	2.5				1.8			
Max. Chloro.											
(µg/l)	2.0		2.6	3.6				3.3			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 28	4.9	1.2			
Aug. 3	4.9	1.3			
Aug. 15	4.3	1.1			
Aug. 24	5.2	1.4			
Sept. 1	<u>4.6</u>	<u>2.0</u>			
Mean	4.78	1.40			
Std. dev.	0.34	0.35			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Sharbot (East Basin) LAKE	Frontenac COUNTY	Olden TOWNSHIP(S)
Watershed Area: 129	km ²	Shoreline : 44.3 km
Surface Area : 824	ha	Cottages : 66 + 17 houses
Maximum Depth: 31.1	m	Resorts : 5 (30)
Volume : 40.57	x 10 ⁶ m ³	% Crown Land :

WATER CHEMISTRY 1979

Total Phosphorus (µg/l)	:			13	Alkalinity (mg/l)	81					
Total Nitrogen (µg/l)	:			334	Colour	15					
	<u>1983</u>	<u>1982</u>	<u>1981</u> ¹	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.3	3.7	4.0	3.6	3.0	2.7			4.5		
Min.											
Secchi (m)	3.7	3.4	3.5	2.9	2.3	2.1			2.5		
Mean Chloro.											
(µg/l)	2.3	1.7	2.2	3.2	2.0	1.9			2.6		
Max. Chloro.											
(µg/l)	14.0	2.4	3.3	5.4	3.3	2.5			3.1		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Hawley Bay			McCrimmon Bay		
July 4	4.0	2.8	July 18	-	14.0
July 17	4.6	1.4	July 24	4.4	1.5
July 24	4.4	2.0	Aug. 1	4.7	1.2
Aug. 7	4.3	1.0	Aug. 21	4.0	1.0
Aug. 14	<u>4.3</u>	<u>1.5</u>	Sept. 5	4.0	1.2
Mean	4.32	1.74	Sept. 11	4.6	-
Std. dev.	0.22	0.69	Sept. 18	4.1	-
			Oct. 2	4.7	1.4
			Oct. 10	4.4	1.6
			Oct. 16	<u>4.1</u>	<u>2.1</u>
			Mean	4.33	3.00
			Std. dev.	0.29	4.46
East Basin					
June 13	3.8	1.4			
June 19	4.3	1.3			
June 26	<u>3.7</u>	<u>1.3</u>			
Mean	3.93	1.33			
Std. dev.	0.32	0.06			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Sharbot (West Basin) LAKE	Frontenac COUNTY	Olden TOWNSHIP(S)
Watershed Area: 88.27	km ²	Shoreline : 31.38 km
Surface Area : 684	ha	Cottages : 155 + 27 houses
Maximum Depth: 31.0	m	Resorts : 2 (25)
Volume : 55.32	x 10 ⁶ m ³	% Crown Land : 5

WATER CHEMISTRY 1979

Total Phosphorus (µg/l)	:	13	Alkalinity (mg/l)	67
Total Nitrogen (µg/l)	:	334	Colour	14

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u> ²	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.4	4.5	4.7	4.3	4.3	4.8	4.2	4.1	4.4		
Min.											
Secchi (m)	3.7	3.7	4.0	3.7	3.0	4.3	3.4	3.4	3.0		
Mean Chloro.											
(µg/l)	1.8	1.8	2.1	2.4	2.1	1.8	1.7	2.0	2.7		
Max. Chloro.											
(µg/l)	3.6	3.8	3.1	3.3	3.1	2.7	3.5	3.6	5.3		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 8	3.7	3.6			
June 22	4.6	1.9			
July 6	4.0	3.1			
July 20	4.6	1.5			
Aug. 3	4.1	1.2			
Aug. 17	4.4	0.6			
Aug. 31	5.5	1.6			
Sept. 14	4.6	1.1			
Mean	4.44	1.83			
Std. dev.	0.54	1.03			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Silver LAKE	Frontenac, Lanark COUNTY	Oso, South Sherbrooke TOWNSHIP(S)
Watershed Area: 29.7	km ²	Shoreline : 9.2 km
Surface Area : 246	ha	Cottages : 87 + 1 house
Maximum Depth: 24.4	m	Resorts : 3 (185)
Volume : 24.91	x 10 ⁶ m ³	% Crown Land : 10

WATER CHEMISTRY 1979

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	93
Total Nitrogen (µg/l)	:	372	Colour	9

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u> ²	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.9	4.1	3.6	3.4	4.0	3.5	3.5		3.7		
Min.											
Secchi (m)	2.8	3.0	3.0	2.8	2.9	3.0	2.6		2.9		
Mean Chloro.											
(µg/l)	1.3	1.6	2.0	2.4	1.8	1.8	1.6		1.7		
Max. Chloro.											
(µg/l)	2.2	2.2	2.9	7.0	2.7	2.8	2.4		2.6		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 16	3.5	1.0			
June 22	4.9	2.2			
June 30	4.3	1.2			
July 6	3.4	1.7			
July 11	3.5	1.0			
July 18	3.3	1.7			
July 23	2.8	1.1			
July 28	3.0	0.8			
Aug. 2	4.1	1.1			
Aug. 9	4.5	-			
Aug. 14	4.7	1.2			
Aug. 20	6.1	0.8			
Aug. 28	4.9	1.2			
Sept. 5	3.3	1.0			
Sept. 13	3.5	-			
Sept. 20	3.0	-			
Sept. 25	3.7	1.4			
Sept. 29	4.1	-			
Oct. 8	3.9	1.9			
Oct. 13	<u>4.0</u>	<u>1.7</u>			
Mean	3.93	1.31			
Std. dev.	0.81	0.41			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Singleton LAKE	Leeds COUNTY	Rear of Leeds & Lansdowne TOWNSHIP(S)
Watershed Area: 295	km ²	Shoreline : 5.8 km
Surface Area : 77	ha	Cottages : 6
Maximum Depth: 13.4	m	Resorts : 2 (28)
Volume : 4.28	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	24	Alkalinity (mg/l)	136
Total Nitrogen (µg/l)	:	504	Colour	22

	<u>1983</u> ¹	<u>1982</u> ²	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.2	2.3							3.4		
Min.											
Secchi (m)	3.0	1.9							2.3		
Mean Chloro.											
(µg/l)	3.6	3.6							4.7		
Max. Chloro.											
(µg/l)	4.5	7.4							7.4		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 7	3.0	3.1			
Aug. 5	3.4	4.5			
Sept. 14	3.1	3.3			
Sept. 30	<u>3.7</u>	<u>3.6</u>			
Mean	3.24	3.63			
Std. dev.	0.30	0.62			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Skootamatta - Upper Lake (West Basin) LAKE	Lennox & Addington COUNTY	Anglesea TOWNSHIP(S)
Watershed Area: 49.34 km ²	Shoreline : 9.6 km	
Surface Area : 456 ha	Cottages : 36 (1974)	
Maximum Depth: 29.3 m	Resorts : 0	
Volume : x 10 ⁶ m ³	% Crown Land :	

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	17	Alkalinity (mg/l)	9.2							
Total Nitrogen (µg/l)	:	363	Colour	20							
	<u>1983</u>	<u>1982</u> ¹	<u>1981</u>	<u>1980</u> ¹	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u> ²	<u>1973</u>
Mean											
Secchi (m)	3.4	4.0		3.6					3.7	4.2	
Min.											
Secchi (m)	2.9	3.0		3.4					3.0		
Mean Chloro.											
(µg/l)	1.0	2.3		2.1					3.5	2.0	
Max. Chloro.											
(µg/l)	1.7	2.8		1.5					6.5		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 6	3.2	0.8			
July 14	3.2	-			
July 21	3.2	1.7			
July 29	2.9	1.0			
Aug. 4	3.2	0.9			
Sept. 1	3.8	-			
Sept. 8	3.8	1.2			
Sept. 16	3.5	0.8			
Sept. 22	3.2	0.5			
Oct. 1	<u>3.5</u>	<u>0.7</u>			
Mean	3.35	0.95			
Std. dev.	0.29	0.37			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

South LAKE	Leeds COUNTY	Front of Leeds & Lansdowne Rear of Leeds & Lansdowne TOWNSHIP(S)
Watershed Area: 38.91	km ²	Shoreline : 10.94 km
Surface Area : 220	ha	Cottages : 17+1 house
Maximum Depth: 14.63	m	Resorts : 0
Volume : 11.73	x 10 ⁶ m ³	% Crown Land : 1

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	26	Alkalinity (mg/l)	125
Total Nitrogen (µg/l)	:	550	Colour	18

1983 1982² 1981² 1980 1979 1978 1977 1976 1975 1974 1973

Mean

Secchi (m) 1.7 1.5 2.1

Min.

Secchi (m) 0.9 0.7 2.0

Mean Chloro.

(µg/l) 5.6 9.0 5.9

Max. Chloro.

(µg/l) 11.6 25.6 8.4

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 24	3.4	-			
July 8	2.1	2.6			
July 22	1.8	6.3			
Aug. 5	1.7	3.9			
Aug. 18	1.2	3.7			
Sept. 1	0.9	4.5			
Sept. 15	1.2	6.6			
Sept. 29	<u>1.5</u>	<u>11.6</u>			
Mean	1.73	5.60			
Std. dev.	0.78	3.01			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

St. Andrews LAKE	Frontenac COUNTY	Hinchinbrooke TOWNSHIP(S)
Watershed Area: 2.8	km ²	Shoreline : 7.6 km
Surface Area : 79	ha	Cottages : 20(1983)
Maximum Depth: 15.8	m	Resorts : 0
Volume : 5.05	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1983

Total Phosphorus (µg/l)	:	21	Alkalinity (mg/l)	42
Total Nitrogen (µg/l)	:	575	Colour	29

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u> ¹	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.9	2.8	1.7	1.8		1.9	1.8				
Min.											
Secchi (m)	2.3	1.7	1.2	1.0		1.7	1.3				
Mean Chloro.											
(µg/l)	2.2	2.6	8.2	10.5		5.9	6.8				
Max. Chloro.											
(µg/l)	8.0	4.5	11.0	15		9.0	15.2				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 28	2.3	8.0			
June 4	3.2	1.6			
June 11	3.8	2.0			
June 19	4.1	1.1			
June 26	3.5	1.4			
July 3	3.5	1.6			
July 10	4.1	3.0			
July 17	4.1	-			
July 24	3.8	2.1			
Aug. 7	4.1	1.5			
Aug. 14	4.9	2.4			
Aug. 20	4.7	0.8			
Aug. 28	4.7	1.1			
Sept. 5	<u>4.3</u>	<u>---</u>			
Mean	3.94	2.22			
Std. dev.	0.68	1.92			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

St. Peter LAKE	Hastings COUNTY	McClure TOWNSHIP(S)
Watershed Area: 67 km ²	Shoreline : 13.2 km	
Surface Area : 234 ha	Cottages : 182	
Maximum Depth: 28.7 m	Resorts : 10 (301)	
Volume : 17.78 x 10 ⁶ m ³	% Crown Land : 10	

WATER CHEMISTRY 1978

Total Phosphorus (µg/l)	:	7	Alkalinity (mg/l)	10						
Total Nitrogen (µg/l)	:	325	Colour	19						
1983	1982 ¹	1981	1980	1979 ²	1978 ²	1977 ²	1976 ²	1975	1974	1973

Mean

Secchi (m) 3.9 3.6 3.2 3.4 3.9 4.8 3.8

Min.

Secchi (m) 3.5 3.2 2.7 2.5 2.8 3.0 2.6

Mean Chloro.

(µg/l) 1.0 2.2 1.8 1.6 1.1 1.8

Max. Chloro.

(µg/l) 1.0 3.1 2.9 2.2 2.0 2.7

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 9	3.8	-			
June 30	3.7	-			
July 6	3.5	-			
July 19	3.8	-			
July 30	3.5	1.0			
Aug. 5	4.1	-			
Aug. 28	<u>4.6</u>	<u>0.9</u>			
Mean	3.86	0.95			
Std. dev.	0.39	0.07			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Steenburg LAKE	Hastings COUNTY	Tudor, Limerick TOWNSHIP(S)
Watershed Area: 21.5	km ²	Shoreline : 13.7 km
Surface Area : 277	ha	Cottages : 203
Maximum Depth: 20.1	m	Resorts : 0
Volume : 15.62	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1976

Total Phosphorus (µg/l)	:	10	Alkalinity (mg/l)	52.5
Total Nitrogen (µg/l)	:	352	Colour	8

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u> ²	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	4.3				4.5	4.3	4.7	4.6			
Min.											
Secchi (m)	3.7				3.7	3.7	3.7	3.2			
Mean Chloro.											
(µg/l)	1.6				2.1	2.0	2.0	1.6			
Max. Chloro.											
(µg/l)	3.4				4.6	3.5	3.7	2.8			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
North Bay			West Bay		
June 12	4.3	1.1	May 23	4.6	1.5
June 19	4.6	2.9	June 5	5.2	1.1
July 3	4.0	1.4	June 12	4.3	1.2
July 17	4.3	1.2	June 19	4.3	2.5
Aug. 1	3.7	0.9	July 3	4.4	1.6
Aug. 7	4.3	1.6	July 17	4.0	1.5
Aug. 15	4.6	1.7	Aug. 1	4.0	0.6
Sept. 5	<u>4.7</u>	<u>1.8</u>	Aug. 7	4.7	1.5
			Aug. 15	<u>4.6</u>	<u>2.0</u>
Mean	4.31	1.58	Mean	4.46	1.50
Std. dev.	0.34	0.62	Std. dev.	0.37	0.54
South Bay					
June 12	3.8	1.8			
June 19	4.3	2.5			
July 3	4.3	3.4			
July 17	4.3	2.6			
Aug. 1	4.0	0.6			
Aug. 7	4.8	1.6			
Aug. 15	4.3	1.4			
Sept. 5	<u>4.0</u>	<u>0.6</u>			
Mean	4.23	1.81			
Std. dev.	0.30	0.98			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Sydenham LAKE	Frontenac COUNTY	Loughborough TOWNSHIP(S)
Watershed Area: 49 km ²	Shoreline : 42 km	
Surface Area : 451 ha	Cottages : 152	
Maximum Depth: 37 m	Resorts : 2 (51)	
Volume : 32.05 x 10 ⁶ m ³	% Crown Land : 0	

WATER CHEMISTRY 19

Total Phosphorus (µg/l) :	34	Alkalinity (mg/l) 111
Total Nitrogen (µg/l) :	501	Colour

	<u>1983</u>	<u>1982</u> ¹	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.5	3.7		4.2	3.6	3.6	5.0				
Min.											
Secchi (m)	2.0	3.2		3.4	2.6	3.2	3.8				
Mean Chloro. (µg/l)	1.9	2.4		3.2	3.0	2.1	3.4				
Max. Chloro. (µg/l)	5.1	3.3		3.7	5.2	3.1	5.3				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Eel Bay			East End		
June 28	3.4	2.8	June 27	3.0	1.1
July 4	2.9	5.1	July 6	5.0	1.0
July 14	3.0	1.6	July 13	4.9	1.4
July 19	3.2	2.7	July 20	4.9	1.4
July 26	2.9	3.2	July 28	3.7	-
Aug. 25	2.9	1.6	Aug. 4	4.4	2.0
Sept. 5	<u>2.0</u>	<u>2.3</u>	Aug. 11	3.2	2.1
			Aug. 18	2.7	1.5
Mean	2.90	2.76	Aug. 24	3.8	0.8
Std. dev.	0.44	1.20	Sept. 1	3.5	1.6
			Sept. 7	3.7	-
			Sept. 14	4.0	0.9
			Oct. 7	3.4	1.1
			Oct. 20	4.0	1.2
			Nov. 1	<u>2.7</u>	<u>2.8</u>
			Mean	3.79	1.45
			Std. dev.	0.76	0.56

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Temperance LAKE	Leeds COUNTY	Rear of Yonge & Escott TOWNSHIP(S)
Watershed Area: 7.88	km ²	Shoreline : 11.74 km
Surface Area : 119	ha	Cottages : 24
Maximum Depth: 4.57	m	Resorts : 0
Volume : 3.13	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	18	Alkalinity (mg/l)	68
Total Nitrogen (µg/l)	:	378	Colour	17

	<u>1983</u>	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.3	1.8	1.4	1.9	2.6	2.2	1.2	1.9			
Min.											
Secchi (m)	1.7	1.1	1.0	1.5	2.3	1.5	0.3	1.6			
Mean Chloro.											
(µg/l)	1.8	4.5	7.8	6.0	3.1	2.8	8.9	3.6			
Max. Chloro.											
(µg/l)	3.3	5.8	12.0	8.8	6.9	4.9	21.0	19.0			

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 25	2.6	1.6			
June 29	2.6	1.0			
July 6	2.7	2.1			
July 13	2.1	2.2			
July 22	1.8	1.6			
July 27	1.7	1.0			
Aug. 5	2.4	3.3			
Aug. 11	2.4	2.4			
Aug. 18	2.4	1.6			
Aug. 23	<u>2.7</u>	<u>1.5</u>			
Mean	2.34	1.83			
Std. dev.	0.36	0.69			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Thirteen Island LAKE	Frontenac COUNTY	Bedford, Hinchin- brooke, Lough- borough, Portland TOWNSHIP(S)
Watershed Area: 40	km ²	Shoreline : 13.8 km
Surface Area : 132	ha	Cottages : 60
Maximum Depth: 25.9	m	Resorts : 2 (4)
Volume : 6.63	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	16	Alkalinity (mg/l)	94.5
Total Nitrogen (µg/l)	:	470	Colour	7

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.3								4.3		
Min.											
Secchi (m)	2.7								3.0		
Mean Chloro.											
(µg/l)	2.3								2.8		
Max. Chloro.											
(µg/l)	3.0								5.6		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Aug. 28	4.0	3.0			
Sept. 5	2.7	1.4			
Sept. 11	3.4	2.5			
Sept. 18	<u>3.0</u>	<u>2.3</u>			
Mean	3.28	2.30			
Std. dev.	0.56	0.67			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Troy LAKE	Leeds COUNTY	South Crosby TOWNSHIP(S)
Watershed Area: 8.17	km ²	Shoreline : 8.5 km
Surface Area : 119	ha	Cottages : 16 (1974)
Maximum Depth: 5.2	m	Resorts : 0
Volume : 2.74	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	23	Alkalinity (mg/l)	58
Total Nitrogen (µg/l)	:	413	Colour	15

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.0	2.4	2.9	2.3	2.0	1.9	1.7		2.1		
Min.											
Secchi (m)	0.9	1.2	2.1	1.5	1.2	1.2	1.2		1.4		
Mean Chloro.											
(µg/l)	7.1	5.6	3.9	6.7	8.0	7.4	6.9		6.2		
Max. Chloro.											
(µg/l)	16.8	20.3	6.3	13	17.2	13.9	15.6		12.0		

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 23	3.0	3.0			
May 29	3.7	2.4			
June 12	3.4	5.6			
June 19	3.2	3.1			
June 26	3.2	2.4			
July 3	2.4	3.3			
July 10	2.4	4.4			
July 17	2.2	5.2			
July 24	1.7	8.8			
July 27	1.5	9.0			
Aug. 7	1.5	12.9			
Aug. 14	1.2	7.1			
Aug. 21	1.2	9.2			
Aug. 28	0.9	12.3			
Sept. 4	0.9	4.5			
Sept. 11	0.9	5.8			
Sept. 25	1.0	12.6			
Oct. 2	<u>1.0</u>	<u>16.8</u>			
Mean	1.96	7.13			
Std. dev.	0.99	4.26			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Twin Sister (East Basin) LAKE	Hastings COUNTY	Marmora TOWNSHIP(S)
Watershed Area: 6.9	km ²	Shoreline : 4.4 km
Surface Area : 51	ha	Cottages : 20
Maximum Depth: 8.54	m	Resorts : 0
Volume : 1.74	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	22	Alkalinity (mg/l)	64
Total Nitrogen (µg/l)	:	490	Colour	18

	<u>1983</u>	<u>1982</u>	<u>1981</u> ¹	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.5	3.4	3.5	3.9							
Min.											
Secchi (m)	3.0	2.7	3.2	3.2							
Mean Chloro.											
(µg/l)	2.2	1.5	3.3	3.5							
Max. Chloro.											
(µg/l)	3.7	2.7	3.3	6.2							

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 23	3.0	1.1			
May 29	3.4	1.4			
June 5	3.0	2.5			
June 19	3.7	3.1			
June 28	3.4	-			
July 3	3.7	3.3			
July 10	3.7	1.5			
July 28	3.7	-			
Aug. 7	4.0	1.6			
Aug. 14	3.4	-			
Sept. 5	3.7	-			
Sept. 11	3.7	1.9			
Sept. 18	3.0	-			
Sept. 25	3.4	2.0			
Oct. 9	<u>3.0</u>	<u>3.7</u>			
Mean	3.45	2.21			
Std. dev.	0.33	0.89			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Twin Sister (West Basin) LAKE	Hastings COUNTY	Marmora TOWNSHIP(S)
Watershed Area: 8.7	km ²	Shoreline : 3.2 km
Surface Area : 35	ha	Cottages : 21
Maximum Depth: 13.4	m	Resorts : 0
Volume : 1.96	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	18	Alkalinity (mg/l)	59
Total Nitrogen (µg/l)	:	470	Colour	13

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.5	3.6	4.4	3.9			3.6				
Min.											
Secchi (m)	3.0	3.2	3.3	3.5			2.7				
Mean Chloro.											
(µg/l)	1.7	2.2	1.9	2.9			1.9				
Max. Chloro.											
(µg/l)	3.7	3.1	4.2	6.4			3.7				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
May 23	4.3	0.5			
June 26	3.8	1.1			
July 6	3.4	0.6			
July 12	3.5	1.4			
July 24	3.0	1.6			
Aug. 1	3.2	3.7			
Aug. 7	3.4	2.8			
Aug. 14	3.7	2.5			
Aug. 24	3.5	2.3			
Sept. 5	<u>3.5</u>	<u>0.8</u>			
Mean	3.53	1.73			
Std. dev.	0.35	1.06			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Upper Beverley LAKE	Leeds COUNTY	Bastard, Rear of Leeds & Lansdowne TOWNSHIP(S)
Watershed Area: 100.06	km ²	Shoreline : 25.7 km
Surface Area : 551	ha	Cottages : 57+2 houses
Maximum Depth: 7.01	m	Resorts : 2 (7)
Volume : 13.3	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 1982

Total Phosphorus (µg/l)	:	19	Alkalinity (mg/l)	142
Total Nitrogen (µg/l)	:	554	Colour	17

	<u>1983</u>	<u>1982</u> ²	<u>1981</u> ²	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.9	1.8	2.5								
Min.											
Secchi (m)	2.3	1.0	2.5								
Mean Chloro.											
(µg/l)	2.5	4.1	2.7								
Max. Chloro.											
(µg/l)	4.3	8.5	2.7								

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
June 30	4.0	1.2			
July 15	3.8	2.5			
July 29	2.3	2.3			
Aug. 12	2.3	4.3			
Aug. 26	2.9	-			
Sept. 13	2.9	2.0			
Sept. 29	<u>2.3</u>	<u>2.8</u>			
Mean	2.93	2.52			
Std. dev.	0.72	1.03			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

West LAKE	Prince Edward COUNTY	Hallowell TOWNSHIP(S)
Watershed Area: 119	km ²	Shoreline : 12.2 km
Surface Area : 502	ha	Cottages : 82+104 houses
Maximum Depth: 4.6	m	Resorts : 22(139)
Volume : 9.94	x 10 ⁶ m ³	% Crown Land : 1

WATER CHEMISTRY 1980

Total Phosphorus (µg/l)	:	18	Alkalinity (mg/l)	113
Total Nitrogen (µg/l)	:	586	Colour	9

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u> ²	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	1.2			2.2							
Min.											
Secchi (m)	0.9			1.0							
Mean Chloro.											
(µg/l)	3.3			4.3							
Max. Chloro.											
(µg/l)	5.0			6.8							

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
July 11	1.1	2.0			
July 18	1.3	3.5			
July 26	1.3	2.4			
Aug. 2	1.1	2.1			
Aug. 8	1.3	2.8			
Aug. 15	1.7	2.4			
Aug. 22	1.4	3.7			
Aug. 29	1.1	3.7			
Sept. 6	1.1	4.6			
Sept. 12	1.0	5.0			
Sept. 19	0.9	3.5			
Sept. 27	<u>1.0</u>	<u>3.6</u>			
Mean	1.19	3.28			
Std. dev.	0.22	0.96			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

White LAKE	Lanark & Renfrew COUNTY		Darling, Bagot & McNab TOWNSHIP(S)	
Watershed Area:	211	km ²	Shoreline :	97.8 km
Surface Area :	2269	ha	Cottages :	449 + 5 houses
Maximum Depth:	9.2	m	Resorts :	10 (508)
Volume :	74.74	x 10 ⁶ m ³	% Crown Land :	50

WATER CHEMISTRY 1975

Total Phosphorus (µg/l)	:	22	Alkalinity (mg/l)	101
Total Nitrogen (µg/l)	:	455	Colour	12

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u> ²	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.8	2.4	2.6	2.7	3.0	3.2	2.8	2.4	3.2	3.0	2.6
Min.											
Secchi (m)	1.8	1.8	1.8	1.7	2.4	2.4	1.9	1.1	2.4	2.1	1.6
Mean Chloro.											
(µg/l)	2.9	3.4	3.2	5.3	3.0	3.7	3.6	7.1	3.8	2.2	4.3
Max. Chloro.											
(µg/l)	6.7	10.1	8.6	23.5	6.7	12.4	7.9	26.0	6.2	4.9	10.5

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Station A			Station B		
June 13	3.2	1.7	June 13	3.8	1.5
June 22	2.9	1.2	June 22	3.2	1.0
June 28	3.2	1.4	June 28	3.8	1.4
July 6	3.2	1.7	July 6	4.0	1.2
July 13	2.7	-	July 13	3.5	3.0
July 20	3.4	2.5	July 20	4.0	3.2
July 28	3.4	1.3	July 28	3.4	1.5
Aug. 4	2.9	2.4	Aug. 4	3.2	2.4
Aug. 10	2.4	2.9	Aug. 10	2.7	3.2
Aug. 18	2.6	2.1	Aug. 18	2.6	1.9
Aug. 24	2.1	2.0	Aug. 24	1.8	4.5
Aug. 31	2.7	3.7	Aug. 31	2.4	5.1
Sept. 7	1.8	4.1	Sept. 7	1.8	4.7
Sept. 14	2.0	3.6	Sept. 14	1.8	3.7
Sept. 22	2.0	6.7	Sept. 22	1.8	6.6
Sept. 29	2.4	2.7	Sept. 29	2.1	4.1
Oct. 19	<u>2.9</u>	<u>2.1</u>	Oct. 6	2.3	3.0
			Oct. 19	<u>2.3</u>	<u>3.7</u>
Mean	2.69	2.63	Mean	2.81	3.09
Std. dev.	0.51	1.39	Std. dev.	0.81	1.54

Date for 1972 available from the report "Enrichment Status of White Lake, Renfrew and Lanark Counties" by M.F.P. Michalski.

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Whitefish LAKE	Leeds COUNTY	S. Crosby, Rear of Leeds & Lansdowne TOWNSHIP(S)
Watershed Area: 660	km ²	Shoreline : 35 km
Surface Area : 408.2	ha	Cottages : 120
Maximum Depth: 7.0	m	Resorts : 3 (113)
Volume : 11.4	x 10 ⁶ m ³	% Crown Land : 0

WATER CHEMISTRY 19

Total Phosphorus (µg/l)	:	27	Alkalinity (mg/l)	80
Total Nitrogen (µg/l)	:	557	Colour	17

	<u>1983</u>	<u>1982</u>	<u>1981</u>	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u>	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	2.4			2.6	3.0	2.7	2.6				
Min.											
Secchi (m)	1.7			1.2	2.4	1.5	1.5				
Mean Chloro.											
(µg/l)	5.3			3.8	2.6	3.4	4.4				
Max. Chloro.											
(µg/l)	17.4			7.6	4.0	7.1	12.0				

¹ based on less than 6 measurements

² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Long Bay			Mid Lake		
July 4	2.7	6.7	July 27	1.7	3.1
July 14	2.7	3.3	Aug. 3	<u>1.7</u>	<u>4.0</u>
July 20	2.6	2.5			
July 26	2.4	1.1	Mean	1.70	3.55
Aug. 15	-	4.4	Std. dev.	0	0.64
Sept. 9	<u>2.7</u>	<u>17.4</u>			
Mean	2.62	5.90			
Std. dev.	0.13	5.94			

SELF-HELP PROGRAM
SOUTHEASTERN REGION
1983

Wollaston LAKE	Hastings COUNTY	Wollaston TOWNSHIP(S)
Watershed Area: 124	km ²	Shoreline : 13 km
Surface Area : 368	ha	Cottages : 178+27 houses
Maximum Depth: 32	m	Resorts : 4 (239)
Volume : 34.67	x 10 ⁶ m ³	% Crown Land : 12

WATER CHEMISTRY 1977

Total Phosphorus (µg/l)	:	11	Alkalinity (mg/l)	67.5
Total Nitrogen (µg/l)	:	360	Colour	12

	<u>1983</u> ¹	<u>1982</u>	<u>1981</u> ¹	<u>1980</u>	<u>1979</u>	<u>1978</u>	<u>1977</u> ²	<u>1976</u>	<u>1975</u>	<u>1974</u>	<u>1973</u>
Mean											
Secchi (m)	3.7		4.8	5.4		4.7	5.1				
Min.											
Secchi (m)	2.4		4.6	5.0		4.0	3.4				
Mean Chloro.											
(µg/l)	1.0		1.3	1.2		2.1	1.2				
Max. Chloro.											
(µg/l)	1.3		1.4	1.5		4.4	2.3				

¹ based on less than 6 measurements

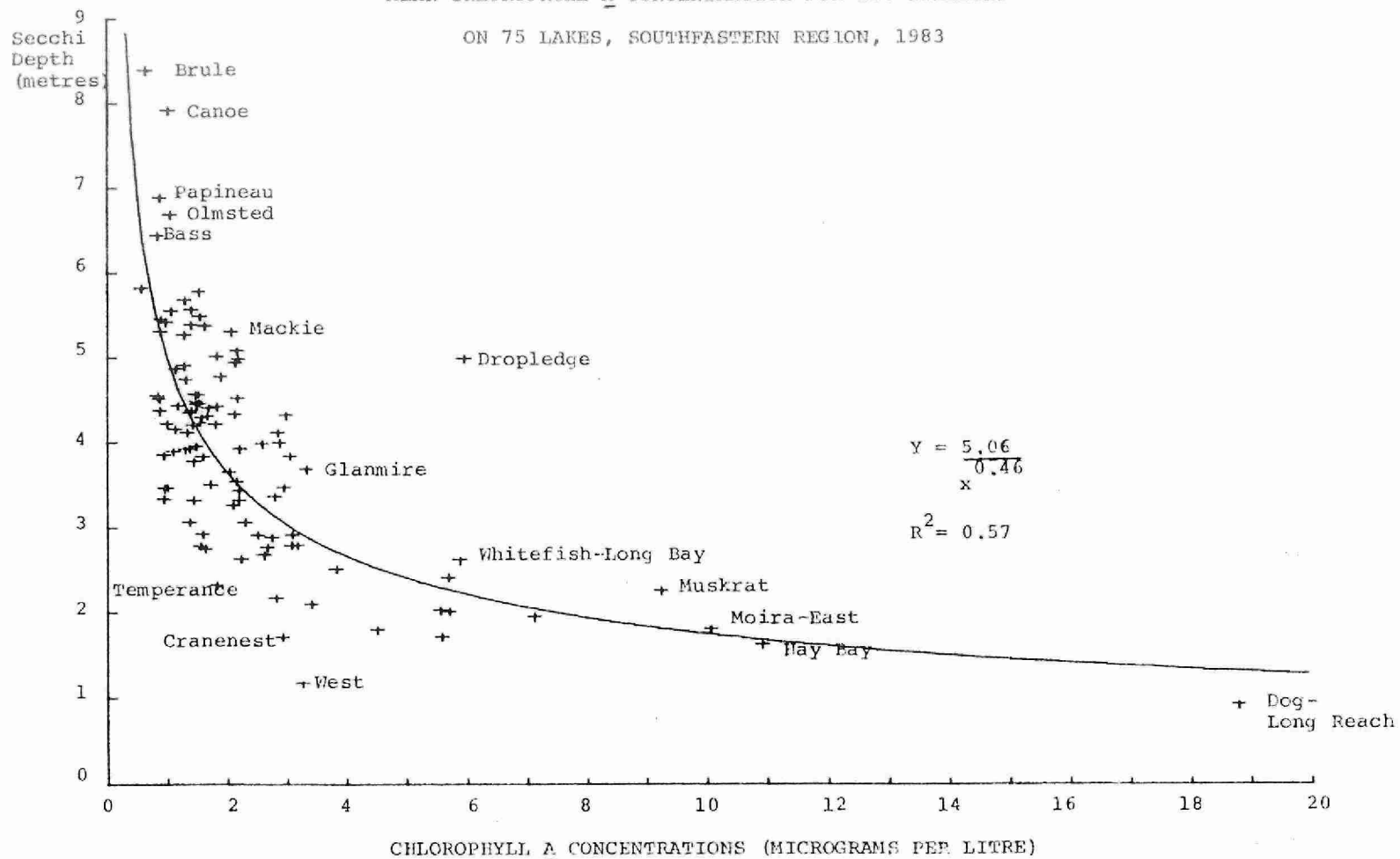
² includes Recreational Lake Survey Program data

<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>	<u>Date</u>	<u>Secchi (m)</u>	<u>Chloro. (µg/l)</u>
Station A			Station B		
June 5	3.1	0.9	June 5	3.0	---
July 19	4.3	1.0	Mean	3.0	---
Mean	3.70	0.95			
Std. dev.	0.85	0.07			
Stations 1 to 6					
July 19					
Stn 1	3.8	1.2			
Stn 2	4.3	1.3			
Stn 3	4.0	-			
Stn 4	4.3	1.0			
Stn 5	2.4	1.1			
Stn 6	7.3	1.2			
Mean	4.35	1.16			
Std. dev.	1.61	0.11			

7.0 APPENDIX II

Graphical relationship between mean Secchi disc visibility depths and mean chlorophyll concentrations for 106 sampling sites on 75 lakes with six or more sets of measurements each in the Southeastern Region of Ontario 1983.

RELATIONSHIP BETWEEN MEAN SECCHI DISC VISIBILITY AND
MEAN CHLOROPHYLL A CONCENTRATION FOR 106 STATIONS
ON 75 LAKES, SOUTHEASTERN REGION, 1983





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